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PHILOSOPHIÆ SCHOLASTICÆ

IN USUM

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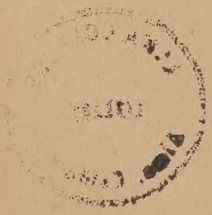


Summula Philosophiæ Scholasticæ

IN USUM

ADOLESCENTIUM

A

J. S. HICKEY, O. Cist.

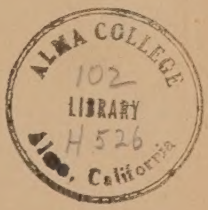
CONCINNATA

VOLUMEN II.

COSMOLOGIA ET PSYCHOLOGIA

EDITIO SEPTIMA

RECOGNITA ET ADAUCTA



DUBLINI

APUD M. H. GILL ET FILIUM

BENZIGER FRATRES (NEW YORK)

HERDER (ST. LOUIS, MO.)

1927

18576

PERMISSU SUPERIORUM

Nihil obstat:

JOANNES CANONICUS WATERS,
Censor Theol. Deput.

Imprimi potest:

✠ EDWARDUS,
Archiepiscopus Dublinen.,
Hiberniæ Primas.

Dublini, die 2ª Julii, 1927.

Salvo jure proprietatis

TYPOGRAPHIA ORD. CIST.
WESTMALLE—BELGIUM

PRINTED IN BELGIUM

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Vol. I. — **Logica et Ontologia**, *Ed.* 7ª. 470 pp., 6s. net.

Vol. II. — **Cosmologia et Psychologia**. *Ed* 7ª. 490 pp., 6s. net.

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PRESS NOTICES.

Irish Theological Quarterly

« Few text-books on Scholastic Philosophy have met with a more uniformly favourable reception than the *Summula Philosophiæ Scholasticæ*, published in three volumes, by an Irish religious of the Mount Melleray Monastery, Rev. J. S. Hickey, O.Cist. . . The author tells us in his Preface that *at the present day students should be taught their Philosophy not exclusively in Latin, nor again exclusively in the vernacular, but as far as possible in both*. And it was his desire to help to make this project a feasible one that prompted a text in Latin with **copious quotations, which amount almost to a running commentary on the text**, *in English*. His efforts entirely deserve the success which is crowning them ».

The Catholic Times.

« . . . As the author is not a German, nor an Italian, the work can only make its way by its merits, and in spite of the half-expressed prejudice that for a Latin text-book of Philosophy you must go abroad. **This is certainly the best text-book we have come across**, no dry-as-dust book, bones without life. It is not repellent, like so many text-books, but on the contrary quite attractive. The writer is keenly interested in his subject, and easily succeeds in communicating this interest. *The language is simple, the exposition crisp, orderly and clear*, based on a very wide reading of writers, ancient and modern. A very useful feature is the frequent citation in the notes of apt passages from English writers, which make the student realize that the subjects he is dealing with are actual and still discussed, and serve to illustrate and drive home what has been expounded in the text. Another result should be to entice the student to extend the range of his reading, to go deeper into at least some special points, and to teach him how to express his Philosophy in English. In this way, what is learnt will be **afterwards easily used and with good effect** ».

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IRISH ROSARY.

« . . . An author should keep his readers in mind rather than those critics whose official duty it is to pass judgment on books. Father Hickey has been singularly fortunate in winning favour with both classes. . .

« The work is enriched with notes and quotations — for the most part in the vernacular. This must be to the advantage of beginners in philosophy who are not accustomed to 'think in Latin.' Besides, *it goes a long way towards helping them to express in their own language the views and arguments of the great scholastics*, whose works done in Latin are closed books to the majority of readers. The style is clear and concise. From end to end we have not found an obscure passage or even phrase. **We recommend it as being one of the best manuals on philosophy we have seen** ». — O. N.

THE ECCLESIASTICAL REVIEW.

Fr. Hickey's *Summula* has probably come to stay as *the leading text book of philosophy* in ecclesiastical seminaries amongst English-speaking peoples. The author's smooth and simple Latinity, together with copious quotations from English authorities, has won for his manual ubiquitous favour with both professors and students. . .

Libellus, cui titulus : « ESSENTIALIA PHILOSOPHLÆ, quæ in usum incipientium digessit Franciscus P. Siegfried in Seminario S. Caroli Borromæi Philadelphiense Professor », est magna ex parte hujus *Summulæ* synopsis, atque studiosis utilissimus.

COSMOLOGIA.

PROŒMIUM.

1. **Cosmologiæ** nomen ex græco (κόσμος et λόγος) desumptum significat illam philosophiæ partem, quæ de mundo corporeo tractat. Nomen autem mundi, quod nonnunquam significat universitatem rerum creatarum tam spiritualium quam materialium, hic adhibetur sensu stricto et proprio ad designandam universitatem rerum materialium, quæ cœlo terraque continentur. Quam quidem universitatem, propter ejus elegantiam et pulchritudinem, Græci κόσμον, Latini *mundum,* appellatam voluerunt ; voces enim κόσμος et *mundus* iis tribuuntur rebus, quæ ordine et decore fulgent. Jamvero, rerum materialium aliæ sunt *organicæ* seu viventes, aliæ *anorganicæ* seu vita carentes ; et proinde est cosmologiæ munus de his omnibus tractare, quas tamen considerat non præcise prout sunt organicæ vel anorganicæ, sed prout sub universo corporis conceptu comprehenduntur. Unde, **Cosmologia** definiri potest : — *Scientia, quæ supremas causas et communissimas proprietates rerum materialium investigat.* Cosmologia igitur ita versatur circa corpora (ejus objectum *materiale),* ut non singulas corporum species, sed id, quod omnibus omnino corporibus est commune, ultimas scilicet et universales rationes et proprietates, consideret ; quæque proinde constituunt ejus *proprium* et *formale objectum,* quo specificatur in seipsa, et a scientiis physicis, quæ idem cum ipsa habent objectum materiale, distinguitur.[1]

[1] From its Greek etymology the word *cosmology* means the science of the world. It ought, therefore, to include in its scope the study of the whole material universe, that is to say, of in-

2. Consectarium. Scientiæ, quæ *physicæ* seu *naturales* vocantur, dum, quoad *objectum materiale,* cum cosmologia et inter se conveniunt, a cosmologia et ab invicem discrepant quoad *objectum formale, i. e.,* quoad propriam et specialem rationem, quam singulæ hæ scientiæ in corporibus considerant. Ope enim observationis et experimentorum, phænomena naturæ corporeæ explorant, et leges, quibus corpora in suis operationibus obediunt, minutatim describunt. Et quidem *physica* se occupat circa phænomena, actiones et proprietates, quæ in corporibus, quibus insunt, mutationem substantialem non important; *chimia* scrutatur corpora prouti sunt chimice simplicia vel composita, variasque proportiones juxta quas composita ex simplicibus generantur, ac leges, quibus dissolutiones compositorum reguntur, exquirit atque exponit; *mechanica* suum objectum proprium facit leges, quibus subduntur corporum motus et æquilibrium diversa-

---

organic substances, of plants, of animals, and of man himself. But, as a matter of fact, the whole range indicated by the etymology of the word has been narrowed in the actual meaning. In our day cosmology is a branch of philosophical study, and therefore excludes from its investigation whatever forms the object of the natural sciences. While the sciences of physics and biology seek the proximate causes of corporal phenomena, the laws that govern them, and the wonderful harmony resulting therefrom, cosmology aims to discover the deeper and remoter causes which neither observation nor experiment immediately reveals. This special purpose restricts in many ways the field of cosmology. There is another limitation not less important. Man's unique position in the universe makes him the object of a special philosophical study, viz., psychology or anthropology; and, in consequence, that portion of the corporeal world with which these sciences deal has been cut off from the domain of cosmology properly so called.

There is a tendency at present to restrict the field still further, and limit it to what is known as inorganic creation. . . Hence, for those who accept this view, cosmology has nothing to do with organic life, but is reduced to «a philosophical study of the inorganic world». Such in our opinion is the best definition that can be given. At the same time it should be remarked that many philosophers still favour a broader definition, which would include not only the mineral kingdom, but also living things considered in a general way — (**Nys**, *The Catholic Encycl.,* v. iv., p. 413; cf, ***O'Neill,*** Cosm., v. i. p. 20).

rum inter se virium ; *astronomia* se convertit ad evolutiones, motus, aliaque phænomena cœlestium corporum indaganda atque describenda. Denique, *geologia, mineralogia, palæontologia* investigant ac describunt varia telluris *strata, mineralia,* necnon *reliquias* entium viventium, quæ in ejus visceribus reperiuntur. Nulla autem inter has scientias penetrat ad ultimam rationem intrinsecam vel ad ultimas causas extrinsecas illarum proprietatum, quæ in corporibus manifestantur. Cosmologia vero in interiorem rerum materialium naturam penetrans, earum originem et finem, essentiam constitutionemve et proprietates, quæ sensum et experientiam prorsus effugiunt, speculatur.[1] Quare, cosmologia firmum præbet fundamentum, unde scientiæ physicæ exordium sumant, dum contuendo intrinseca et universalissima corporum principia potest intimum nexum, qui obtinet inter omnes cognitiones, quas de ordine physico possidemus, secure stabilire. Scientiæ vero naturales complementum afferunt, quo mundus corporeus non modo in suis altioribus principiis cognoscatur, sed etiam in rationibus magis determinatis et experientiæ magis obnoxiis exhibeatur. Nemo igitur non videt quantum insaniant materialistæ, empi-

[1] Cosmology is *the philosophical science of the physical world.* (1) It deals with the *physical world,* and in this respect, its object is the same as that of natural sciences, with this difference, however, that it deals with all physical realities, while each of them is concerned only with certain groups. (2) It is a *philosophical science,* and, in this, its point of view differs from that of the other sciences. Thus physics deals with the common properties of matter; chemistry with its changes; mineralogy with the description and classification of minerals; geology with the formation of the crust of the earth, etc. None touches on the higher questions of the intimate and ultimate constitution of matter. They assume that matter exists, and show its various properties and activities, but do not consider its essential nature.

Cosmology, therefore, completes natural sciences. It endeavours to answer questions which they do not answer. Yet it evidently depends on them, since it tries to explain the real world. Its method is chiefly inductive, starting from common experience or from scientific conclusions, and rising to higher generalizations by the use especially of the principles of causality and of sufficient reason — (**Dubray**, *Introductory Philosophy,* p. 423).

ristæ et alii hujusmodi dictitantes cosmologiam et scientias naturales inter se pugnare. Tantum enim abest, ut ad invicem opponantur, ut mutuo se adjuvent atque perficiant. Nam, ex una parte, nonnisi experientia innitens et pronuntiata scientiarum naturalium adhibens, potest cosmologia procedere ad internam corporum naturam cognoscendam et ad proprietates, quæ naturam corpoream consequuntur, ab aliis accurate distinguendas ; ex altera autem parte, mens humana, dum has prosequitur scientias, non parvum a cosmologia accipit subsidium, quatenus ab ipsa protegitur, ne aut parvipendat realitates, quæ sensum et experientiam excedunt, aut in errorem incidat circa corporum originem et finem ultimum, vel contingentem naturam legum, quibus corpora diriguntur.[1]

3. Cosmologiæ diviso. Totus hic de mundo corporeo tractatus commode dividi potest in tres partes, quarum *prima* innitens principio causalitatis examinat falsas circa originem mundi sententias, et, notione creationis exposita, verum mundi exordium, et finem eidem præstitutum demonstrat ; *altera,* existentia corporum, quibus mundus coalescit, pro facto indubio admissa (cf. *Crit.*, nn. 196-

[1] The physical sciences, which now are held in so much repute, and everywhere draw to themselves a singular admiration, because of the many wonderful discoveries made in them, would not only take no harm from a restoration of the philosophy of the ancients, but would derive great protection from it. For the fruitful exercise and increase of these sciences it is not enough that we consider facts and contemplate nature. When the facts are well known we must rise higher, and give our thoughts with great care to understanding the nature of corporeal things as well as to the investigation of the laws which they obey, and of the principles from which spring their order, their unity in variety, and their common likeness in diversity. It is marvellous what power and light and help are given to these investigations by scholastic philosophy, if it be wisely used.

On this point it is well to call one thing to your minds. It is only by the highest injustice that any jealousy of the progress and increase of natural science is laid as a fault at the door of that philosophy. When the scholastics, following the teaching of the Holy Fathers, everywhere taught throughout their Anthropology that the human understanding can only rise to the know-

200), disserit de proprietatibus, quæ corporibus universim conveniunt, et de variis circa eorum principia constitutiva systematibus; *tertia,* origine et natura corporum jam cognitis, de naturæ physicæ legibus et de possibilitate derogationis ab his legibus quæstionem instituit.

COSMOLOGIÆ PARS PRIMA.

De Mundi Origine.

4. Tres sententiæ viguerunt et vigent apud philosophos, ubi de stabilienda relatione mundi ad Deum agitur. Alii enim profitentur mundum esse a Deo essentialiter distinctum et ad Eum referri ut effectum ad causam efficientem. Huic sententiæ, quæ est scholasticorum, ex adverso opponuntur duæ aliæ, scilicet: *(a)* sententia *pantheistarum* docentium omnia esse unam eamdemque substantiam, et hanc unicam substantiam esse Deum; mundum proinde referri ad Deum, ut accidens refertur ad substantiam, quam afficit ac modificat; *(b)* sententia *materialistarum,* juxta quos materia ab æterno extitit et quidem infecta et a Deo omnino independens, immo ipsam Dei existentiam de medio tollere hi philosophi pro viribus conantur.

5. Tum pantheismus tum materialismus gloriantur no-

ledge of immaterial things by things of sense, they well understood that nothing could be more useful for the philosopher than to investigate carefully the secrets of nature, and to be conversant, long and laboriously, with the study of physical science. Indeed, they themselves prove this by their works. St. Thomas and Blessed Albert the Great and other princes of the scholastics did not so give themselves up to the study of philosophy as to have little care for the knowledge of natural things. Nay, on this matter there are not a few of their words and discoveries which modern teachers approve and acknowledge to be in harmony with truth. Besides, in this very age, many distinguished teachers of physical sciences openly bear witness that there is no contradiction, truly so-called, between the certain and proved conclusions of recent physics and the philosophical principles of the schools — (**Leo XIII.**, *Encyclical* « Æterni Patris »).

mine «monismi», qui in oppositione ad «creatianismum» non distinguit inter Deum et mundum. Nec sine ratione hæc duo systemata, ceteroquin inter se adeo dissimilia, unum idemque sibi vindicant nomen, quod sub quadam specie sublimitatis perfectæque rerum unitatis purum putum atheismum exprimit.[1] Pariter enim Deum negas sive materiam omnia esse dicas sive Deum.[2] Primo agemus de monismo, deinde de creatianismo.

CAPUT PRIMUM.

DE MONISMO.

ART. I.

DE PANTHEISMO.

In prima hujus articuli parte absurditas pantheismi demonstratur, postea vero in altera parte præcipuæ ejus

[1] For practical purposes pantheism and atheism are the same, except that the latter has the frankness to call things by their true names — (**Schiller**, *Riddle of the Sphinx*, p. 319).

[2] Apart from views that are partial and halting there remain three coherent systems that have striven from time immemorial to give a consistent theory of the world; and the three are pantheism, materialism, and theism. Either we ourselves and all around us are merely the manifestation of one and the same substance, one original force that thinks in a man, seizes its prey in a wild beast, unfolds bud and leaf in an oak, darts through the cloud in lightning, strikes the cliffs in a storm-wave; or, secondly, we ourselves and all around us, earth, and all the stars are due to chance, the product of whirling atoms, how arisen, how ending, known to none; or, thirdly, all has arisen from the fiat of an intelligent Creator, and all exists in consequence with a definite purpose. . . The three systems indeed are not to be put on a level, not simply co-ordinated, but rather the first two to be bracketed against the third. For the first two uphold a monistic conception of the universe, that is, they reduce All to One, though pantheism would make all spiritual, and materialism make all material; whereas theism recognizes the dualism of matter and spirit. And while pantheism and materialism agree in rejecting the reality of a personal God creating and directing the universe, Himself being distinct from it, theism emphatically affirms this reality as a fundamental truth, without which no science, physical or historical, can have a sure foundation — (**Devas**, *Key to the World's Progress*, p. 31).

species, quæ decursu temporis exortæ sunt, breviter, sed quantum necesse est, exponuntur.

§ 1. De Absurditate Pantheismi.

6. THESIS I. — Pantheismus universim sumptus experientiæ et rationi repugnat.

Stat. Quæst. — Pantheismus est *systema philosophicum, quod contendit omnes res mundanas unicam cum Deo constituere realitatem.* Duplex distinguitur pantheismus: *(a)* alius *realis,* qui, rebus mundanis realem existentiam saltem phænomenalem concedens, docet eas esse modificationes et externas manifestationes unicæ substantiæ (naturæ), quæ *Tò Absolutum* vel *Infinitum,* a pantheistis vocatur; *(b)* alius *idealis,* qui, negata reali existentia mundi externi, affirmat prædictam unicam substantiam esse mentem, res autem mundanas, quæ nobis objectivæ et reales apparent, esse totidem ideas vel formas subjectivas hujus substantiæ cogitantis. Dogmata igitur fundamentalia et omni pantheismi formæ communia sunt: — 1°. unicam existere entitatem vel substantiam, quacum identificantur omnia, quæ in mundo visibili apparent distincta atque diversa; 2°. hanc unicam substantiam interna et necessaria evolutione se explicare sub diversis formis, quæ, dum ei tamquam modi seu determinationes inhærent, hanc sensibilem rerum universitatem constituunt.[1] Quum vero res mundanæ jugiter mutentur, necesse est, ut *Tò Absolutum* indesinenter se evolvat.

Unde, ut quodpiam particulare systema pantheisticum dignoscatur, illud imprimis considerandum est, quidnam in tali systemate sit unica illa substantia, quæ omnia in se complecti asseritur, deinde vero qua ratione se evolvat in res diversas, quæ totum mundum componunt.[2]

7. Prob. Thesis. PARS 1ª. *(experientiæ repugnat).* **Arg.** —

[1] Pantheism. . . denies that there is any distinction between God and the universe. . . The universe is, in fact, simply the Divine Being evolving itself in various forms — (**Joyce.** *Nat. Theology,* p. 3).

[2] According to Spinoza, God is the one universal Substance, in which all distinctions and all isolated qualifications are resolved

Doctrina, quæ internæ atque externæ experientiæ adversatur, vera esse nequit ; hæc enim duplex experientia est infallibile medium veritatis (*Crit.*, Th., 14-16). *Atqui* doctrina pantheismi affirmans omnia esse unam eamdemque substantiam experientiæ tum internæ tum externæ evidentissime adversatur ; *ergo*.

Prob. min. 1.° *Adversatur experientiæ internæ,* quæ *(a)* testatur esse in nobis operationes et affectiones, quæ a nobis procedunt et ita sunt nostræ, ut alterius esse minime possint ; et proinde nos habere propriam entitatem, substantialitatem, personalitatem ; *atqui* juxta pantheistas omnes hujusmodi operationes et affectiones nec a nobis procedunt nec nobis sunt propriæ, sed sunt modificationes unicæ substantiæ diversimode se evolventis et determinantis. *(b)* Porro, testatur esse in nobis affectiones et modificationes, quæ non a nobis, sed ab aliis rebus, quæ in nos agunt, producuntur ; *atqui* res, quæ in nos agunt vel sunt substantiæ vel accidentia ; si prius, admittendæ sunt substantiæ a nobis distinctæ ; si posterius (quum accidentia præsupponant substantiam), iterum admittendæ sunt substantiæ a nobis distinctæ.[1]

2°. *Adversatur experientiæ externæ,* quæ testatur sub-

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into unity, to which ***per se*** we cannot therefore ascribe either understanding or will. . . « God does not act in pursuance of a purpose, but only according to the ***necessity*** of His nature. Everything follows from nature with the same logical necessity as that by which the attributes of a thing follow from its idea, or from the nature of a triangle that its three angles are equal to two right angles ». This expresses the fundamental view of every form of pantheism. Even Hegel's conception of God, as the absolute Idea or the absolute Spirit which, in eternal self-movement, proceeds from Itself and becomes nature, and then again, reverting to Itself, becomes a self-conscious spirit, is, in truth, only another name for the same thing — (**Christlieb**, *Modern Doubt and Christian Belief*, p. 163).

[1] Pantheism is inconsistent with the consciousness of self, with the belief in our personality. It may seem a doctrine at once simple and sublime to represent the universe as ἕν καὶ πᾶν, but it is inconsistent with one of the earliest and most ineradicable of our primary convictions. If it can be shown that there are two or more persons, it follows that all is not one, that all is not God.

stantiarum multiplicitatem. Et quidem, sensus externi nos docent plures existere species corporum, quæ proprietates diversas et non raro oppositas præ se ferunt, *v. g.*, mineralia et plantæ, bruta animalia et homines, etc.; *atqui*, admissa doctrina pantheistarum, hæc omnia, quorum quodque suam propriam et independentem entitatem et existentiam manifeste habet, essent modi et phænomena unius substantiæ universalis; *ergo*, nisi quis pessumdet sensuum suorum testimonium, multiplicitatem substantiarum admittere debet.[1]

Pars 2ª. (*rationi repugnat*). **Arg. I.** Uni eidemque substantiæ nequeunt simul inesse proprietates sibi invicem oppositæ; proprietates enim participant naturam substantiæ, a qua derivantur. *Atqui* Deus (ut in theodicæa

According to every scheme of pantheism, I, as a part of the universe, am part of God, part of the whole which constitutes God. In all consciousness of self we know ourselves as persons; in all knowledge of other objects we know them as different from ourselves, and ourselves as different from them. Every man is convinced of this: no man can be made to think otherwise. If there be a God, then, as all His works proclaim, He must be different from at least one part of His works, He must be different from me — (**M'Cosh**, *Intuitions of the Mind*, p. 453).

[1] External and internal experience bear witness to the fact that the world round about us, and human beings themselves, form not really one undivided substance, but many separate individuals, each complete in its own being, differing from and not seldom opposed one to another in natural or voluntary tendencies. Is it not ridiculous to say that a cat is the same real being as the mouse which she devours, and with the dog that worries her, and that the cat and the dog alike are the same being with the master who with his whip restores peace between them? Is it not absurd to maintain that the criminal to be hanged is really the same being with the judge who pronounces sentence of death against him, and with the executioner who carries out the sentence? And who can accept the statement that the atheist is substantially the same being with God, whose existence he denies and whose name he blasphemes? Moreover, experience tells us that there is nothing in the material world known to man which is not either composed of parts or a part itself: and that, consequently, nothing is complete and perfect in its simplicity. How then can this world be really one being with God, of whom we have proved that He is in the highest degree simple? — (**Boedder**, *Nat. Theol.*, p. 114).

probatur) est infinitus, absolute immutabilis, simplicissimus, etc. ; juxta autem doctrinam pantheistarum eum cum mundo confundentium, is ex omni parte limitibus adstringitur, continuo et necessario mutatur, omnimodam compositionem essentialiter includit ; hæ enim sunt proprietates, quæ in mundo visibili manifestantur.[1]

8. II. Pantheismus evertit principia contradictionis et causalitatis ; *ergo* rectæ rationi repugnat.

Prob. antec. 1°. *Evertit principium contradictionis, (a)* quia docet idem esse finitum et infinitum, corpus et spiritum, simplex et compositum, etc. ; quod Hegel videns, et ne securitas pantheismi exinde ullum pateretur detrimentum, *identitatem contradictoriorum* tamquam primum rationis principium statuendam esse affirmavit ; *(b)* quia in sententia pantheistarum unica dumtaxat existit substantia, æterna et necessaria, quæ proinde ut non existens concipi nequit ; *atqui* in tali hypothesi impossibilis evadit comparatio, quæ ad efformandum principium

[1] If all things be but one, argued Aristotle against the pantheists of his time, then things not only contrary but contradictory will be identified, and the same being will be good and bad, good and not good, will be man and horse ; hence one may as justly affirm that all things are nothing, as that all things are one. The proof of the Stagirite is still available against the pantheistic teaching of our time. As sometimes presented, this teaching in some of its features differs from the crude doctrine of ancient India and of the Greek Eleatic school, but in principle it is the same. Thus pantheism supposes that God, who cannot but exist, is one with matter, which when organized, can cease and does cease to exist ; or it makes the imperishable to be at the same time the perishable. Again, God, because existing necessarily, is also necessarily determinate in His mode of existence, and is consequently unchangeable ; whereas the world, as all experience shows, is changeable. Say, then, that the world is an emanation of God, or that it is a body of which He is the soul, and you make the unchangeable, the changeable ; the essentially living and actual, to be perishable and potential. Everything in the world is limited or finite, as all perceive ; but God, self-existing as He is, is unlimited in perfection or is infinite ; then according to the pantheistic hypotheses, He is the infinite-finite as well as the unchangeable-changeable. And since the world in the whole is not different from what it is in its parts, it is finite, changeable, contingent, and cannot, therefore, be the infinite, unchangeable, and self-existing God—(**Ronayne**, *God Knowable and Known*, p. 102).

contradictionis requiritur. Nam comparatio haberi nequit, nisi detur terminus comparationis, qui in casu præsenti esset conceptus objectivus *non-entis*; atvero non-ens juxta pantheistas concipi nequit.[1]

2°. *Evertit principium causalitatis,* quia fieri non potest, ut ex aliqua re tamquam a causa seu principio totali quidquam prodeat quod sit majoris perfectionis quam suum ipsius principium; *atqui* si divina substantia seu ens absolutum et indeterminatum pantheistarum jugi processu evolutionis se convertit in totum mundum, perfectius ex imperfecto vel minus perfecto procedit; quidquid enim realitatis et determinationis tale ens *acquirit* ut terminum hujus evolutionis, ante evolutionem procul dubio non possidebat.[2] *Ergo* pantheismus principia contradictionis et causalitatis penitus evertit.

9. **Cor.** Ergo pantheismus est systema philosophicum

[1] The support of all our knowledge, the principle of contradiction, is without meaning, and can have no real or possible application, if the doctrine of pantheism is admitted. When we say that it is impossible for the same thing to be and not to be at the same time, we understand that there is the possibility of not-being; in our mind the idea of being excludes that of not-being only with respect to the same thing and at the same time. If there is only one being, and all other being is impossible, it follows that the idea of not-being is absolutely contradictory, and all the propositions in which it is expressed are absurd. There is in this case only one being which is everything, to this being negation of being can never be applied; this negation, then, is absolutely absurd. – (**Balmes**, *Fundamental Philosophy*, v. ii., p. 431).

[2] An activity, by which the First Cause should produce in itself what it does not already possess, is inconceivable. Such production would result in effects contained in their total cause neither *formally* nor *eminently*: that is to say, neither in the same way in which they exist when produced, nor in a higher way more than equivalent to the existence of them all. The total cause of the determinations of being into which the pantheistic Deity evolves itself, is supposed to be this Deity itself, without the determinations to be evolved. For these cannot be in that Deity *formally*, before their evolution takes place, otherwise there would be no evolution. Nor can they be said to exist in it *eminently*, before they are *formally* actuated: because on this supposition the First Being, so far from tending by its evolution to unfold its own essence, as pantheists would have it, would

perniciosissimum. Nam *(a)* quatenus contrariatur testimonio conscientiæ, sensuum et rationis, inducit *scepticismum universalem ; (b)* quatenus fingit Deum a ceteris rebus, quæ existunt vel existere possunt, minime distinctum, sed omnibus earum attributis oppositis constantem, inducit *atheismum ;* « Deus pantheisticus certe non est Deus, sed contradictionum cumulus » (**Schiffini**, *Th. Nat.*, p. 273) ;[1] *(c)* quatenus docet omnem rerum multiplicitatem ac diversitatem ab una substantia per necessariam evolutionem procedere, inducit *fatalismum* et omnem libertatem divinam ac humanam aufert, et, quod consequens est, omne discrimen inter turpe et honestum plane evanescere facit ;[2] *(d)* quatenus ponit hominem esse terminum evolutionis, in qua divina substantia conscientiam sui attingat *inducit ruinam ordinis moralis et socialis*. Nullus enim hujusmodi stare potest ordo, nisi

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tend rather to corrupt that essence and to make a monster of it.

Consequently, on the pantheistic hypothesis, the First Cause is less perfect before it determines itself than it becomes by such determination ; and yet this lower perfection suffices to effect the determination and raise it to a more perfect state. In other words it is in itself the total cause of succesive advancements in perfection, without previously possessing those superadded either formally or eminently. Thus the pantheistic God continually violates the inviolable principle of causality. Either the principle of causality must go or pantheism — (**Boedder**, *op. cit.*, p. 115).

[1] When God is nature and nature is God, everything indeed is divine, but also nothing is divine ; . . . in truth our God does not exist in the apprehension of pantheistic thinkers ; since, when such truths as creation and personality are denied, the very idea of God is fundamentally sapped ; and although the prevailing belief of mankind may still be humoured by a discreet retention of its conventional language, the broad practical result is neither more nor less than atheism — (**Liddon**, *Bampton Lectures*, p. 28).

[2] Pantheism has only one way in which to escape from the mystery of evil, and that is to deny all distinction between right and wrong, between moral good and moral evil. Of course there can be no such thing as sin for the pantheist, because all, according to his creed, is nature, and development, and necessity. The ontology and ethics of pantheism may be summed up in one sentence, « Whatever is, is one ; and there is neither right nor wrong, but all is fate and nature » — (**Rigg**, *Modern Scepticism*, p. 70).

sit superior, cui homines jure subjiciantur ac pareant; nisi sint leges sapienter conditæ et sanctione efficaci fultæ. Atvero, si homines non sint nisi modi divinæ substantiæ, sunt et ipsi entia divina, immo ipsa perfectio divinitatis, quæ in eis intelligentiam et sui conscientiam assequitur, quæque proinde independenter ab homine nullum actum rationalem potest elicere, nullam legem statuere, nullam obedientiam exigere, nullam pœnam sumere.[1]

Porro, si unica datur substantia necessario se evolvens, demitur tota relatio socialis hominum ad invicem, quum talis relatio, ut existat, requirat liberum obedientiæ, justitiæ, etc., exercitium ; id quod pantheismus sua natura prorsus excludit. Nil igitur mirum, quod hoc nequissimum systema ubique pergrassans, Pius Nonus pluries *(v. g.,* in suo *Syllabo,* 1864 edito, et postea in Concilio Vaticano) solemniter damnavit.[2]

[1] This pantheistic God, who is identical with the world, cannot have personal attributes, such as intellect, or will; nor can His providence rule the world with which He is identified; nor can He, by His sanction of the moral law, exercise control over the acts of man, for these are His own acts; so that in many respects pantheism is indistinguishable from atheism, at the same time that it exercises an attraction, which may almost be called a fascination even on some persons who would detest anything that they recognized as opposed to the doctrine of the Catholic Church — (**Hunter**, *Dogmatic Theology,* v. ii., p. 19).

[2] In his Allocution of June 9, 1862, Pius IX. thus condemns pantheism: « With a perversity only equalled by their folly they venture to assert that the Supreme, All-wise, All-provident Deity has not existence apart from the visible universe; that God and nature are the same, and similarly subject to change; that God is modified *(reapse fieri)* in man and the world and that everything is God, and possesses the very essence of the Divinity. But God and the world then being one and the same thing, there is no difference between spirit and matter, necessity and liberty, truth and falsehood, good and evil, right and wrong. In truth, nothing can be imagined more insane, impious, and irrational than this teaching. » Further, the Pope shows how absolutism in the State follows logically from pantheism. « They attack and endeavour to destroy the rights of all lawful property, and imagine and coin for themselves, with perverse mind and purpose, an unlimited, uncircumscribed right, which the State is to enjoy, the State being in their rash judgment, the organ and source of all right ». Pantheism was condemned in terms by the Syllabus — (**Hettinger-Bowden,** *Natural Religion,* p. 175).

10. Obj. I. — Admittendum est ens infinitum ; *atqui* ens infinitum necessario includit omnem realitatem, et proinde extra illud nulla datur realitas ; *ergo* pantheismus non est rejiciendus.

Resp. — *Conc. maj. Dist. min.* Ens infinitum ita includit omnem realitatem, ut nulla sit realitas, quam aliquo modo *(i. e.,* formaliter vel eminenter, cf. *Ont.,* n. 395) non contineat, *conc. ;* ita continet omnem realitatem, ut præter ipsum nulla alia realitas existat, *neg.* Pariter *dist. cons.* Extra ens infinitum nulla datur realitas, quæ aliquo modo non existit in illo, *conc. ;* præter ens infinitum alia entia non existunt, *neg.* Notio entis infiniti nec includit nec excludit notionem existentiæ aliarum rerum. Necesse quidem est, ut hujusmodi ens aliquo modo possideat perfectiones omnium rerum actualium et possibilium, secus non esset infinite perfectum ; minime autem requiritur, immo absolute repugnat, ut res mundanas earumque perfectiones formaliter possideat, quum hæ ex natura sua imperfectiones et limitationes involvant.

Obj. 2. — Illud ens nequit infinitum dici, quo majus cogitari potest ; *atqui* si Deus non contineat formaliter omnem realitatem, eo majus cogitari potest, nimirum, ens formaliter continens omnem realitatem ; *ergo.*

Resp. — *Dist. maj.* Illud ens nequit infinitum dici, quo majus *numero* cogitari potest, *neg. ;* quo majus *perfectione, conc. Contradist. min.* Si Deus non contineat formaliter omnem realitatem, eo majus *quoad numerum* cogitari potest, *conc. ; quoad perfectionem, neg.* Deum esse infinite perfectum non significat Ipsum esse formaliter entitatem omnium, quæ sunt, sed tantum nullam esse vel dari posse entitatem, quæ, modo excellentiori, in Ipso non reperiatur. Infinita perfectio comitatur necessitatem essendi, et proinde perfectionem contingentem non modo non includit, sed necessario excludit. Unde, finitum infinito superadditum non constituit *plus entis et perfectionis,* sed *plura* entia. Nam ad *plura* habenda sufficit, ut unum alteri adjiciatur ; ut vero *plus entis* seu aliquid majus quoad perfectionem habeatur, necesse est, ut perfectio plurium coalescat ; hoc autem fieri non potest, nisi perfectio plurium in eodem genere vel ordine contineatur *(v. g.,* scientia non fit major ex additione auri). Jamvero, entitas finita non est ejusdem ordinis ac entitas infinita, sed est hujus entitatis imitatio et participatio analogica : ex illis igitur simul sumptis nihil perfectius resultat, quemadmodum potestas principis absoluto imperio gaudentis, vel scientia magistri aliquam scientiam plene callentis, non augetur seu non evadit major *intensive* et *quoad perfectionem,* si principi addatur potestas, quam ipse suis ministris communicavit, vel magistro adjiciantur cognitiones, quas ab ipso discipuli receperunt ; licet sint ob talem participationem

potestatis vel scientiæ ***plures potentes, plures scientes,*** minime vero ***plus*** potestatis, ***plus*** scientiæ. « Si participans additur ei, quod est per essentiam, tale non facit aliquid majus » (**S. Th.**, 3 Sent. D. 6, q. 2, a. 3).

Obj. 3. — Mens humana habet ineluctabilem tendentiam rerum multiplicitatem ad unitatem revocandi : *atqui* hæc tendentia est vana ac illusoria, si rerum multiplicitas non constituit universalem identitatem ; *ergo*.

Resp. — *Dist. maj.* Mens habet tendentiam, ut rerum creatarum multiplicitatem ad unitatem originis et ad unitatem logicam per ideas universales revocet, *conc.*, ad unitatem realem et pantheisticam. *neg. Contradist. min.* et *neg. concl.* Tantum abest ut mens tendat ad realem identitatem rerum affirmandam, ut ineluctabili tendentia feratur ad earum multiplicitatem et diversitatem agnoscendam : conscientia enim testatur nos propriam et ab aliis distinctam habere individualitatem ; sensus referunt diversitatem inter res externas existentem ; ratio attingit ad internas ac essentiales rerum differentias.[1]

Obj. 4. — Conceptus nostri, ut veri sint, naturis rerum debent

[1] Pantheism reduces all existence to an absolute unity ; multiplicity either has no existence, or is limited to phenomena, which, in the judgment of some followers of this system, contain no reality of any sort, and, in the opinion of all pantheists, can contain no substantial reality. According to them, therefore, the idea of number either has no correspondence in the reality, or it relates only to modes of being, to the various modifications of the same being, and therefore does not extend to the beings themselves, for in this system there is only one being. If this be so, how is it that the idea of number exists in our understanding ? how is it that we can conceive not only many modes of being, but many beings ? In the system of the pantheists not only is there no multiplicity of beings, but it is impossible that there should be ; why then has our understanding this radical vice which necessarily leads it to conceive the multiplicity of things, if this multiplicity is absurd ? why this ideal defect confirmed by experience, which also leads us to believe that there are many distinct *things* ? . . . Negative judgments form a considerable part of the wealth of our understanding ; pantheism destroys them. In this system the proposition : A is not B, can never be true ; for, if all is identical, one thing cannot be denied of another, there would be no distinct thing, there would be no *one* or *another* : all would be one ; the negative judgment must be limited to the following : in reality A is the same as B, there is only the appearance of distinction ; B is A existing or represented differently — (**Balmes**, ***Fund. Phil.***, v. ii., p. 429).

esse conformes ; *atqui* in rebus omnibus percipimus communissimam rationem entis diversimode modificatam ; *ergo* res omnes sunt unicum ens diversimode modificatum.

Resp. *Dist. maj.* Conceptus debent esse conformes rebus quoad id. quod repræsentant, *conc. ;* quoad modum, quo id repræsentant *subdist.,* fundamentaliter, *conc. ;* formaliter *neg. (Crit.,* n. 229). *Contradist. min.* In rebus omnibus percipimus rationem entis *realiter* omnibus communem *neg. ; logice* communem, quatenus entia revera multa, sed quodammodo inter se similia, possunt uno eodemque conceptu abstracto repræsentari, *conc.*

Obj. 5. — Deus est in omnibus rebus, in 'ipso enim vivimus, movemur et sumus,' ait *S. Paulus ; atqui* hoc cum pantheismo quadrat ; *ergo.*

Resp. *Dist. maj.* Deus est in omnibus ut causa efficiens, conservans et exemplaris, *conc. ;* ut causa formalis vel materialis aut quocumque modo constitutiva, *neg. Contradist. min.* et *neg. concl.* « Sane esse omnium dixerim Deum (ait **S. Bernardus**, *sermo* 4 *in Cant.* n. 4), non quia illa sunt quod est ille ; sed quia *ex ipso,* et *per ipsum* et *in ipso* sunt omnia. Esse est omnium quæ facta sunt, ipse factor eorum, sed *causale,* non *materiale* »

§ 2. De Variis Pantheismi Systematibus.

11. Antiquissima pantheismi forma occurrit apud Indos, quorum religio brahmanica hoc dogma continet : quodcumque est, Brahma est, et quod Brahma non est, nihil est.

Ortus mundi in hoc systemate per Brahmæ transformationes explicatur. Modo Brahma assimilatur araneæ sempiternæ, quæ telam rerum ex se continuo educit et iterum in se reducit ; modo comparatur igni, cujus splendores et scintillæ sunt res visibiles ; modo oceano, cui res omnes, quasi undæ, spumæ, guttæ, innatant.

12. Pantheismus græcus. Schola Ionica unicum agnoscebat principium, idque materiale, quod se evolvit in omnes res mundanas.

Stoici profitebantur pantheismum hylozoisticum. Mundus, inquiebant, est ens vivens, cujus anima est Deus, qui materiam secum indissolubiliter conjunctam in multitudinem et varietatem rerum mundanarum evolvit.[1]

[1] Among the more important schools of antiquity, stoicism,

Neoplatonici docuerunt omnia ex Deo per successivas ejusdem emanationes orta fuisse.[2] Præcipuus neoplatonismi auctor fuit *Plotinus (ob.* 270).

13. Pantheismus mediæ ætatis. Juxta *Scotum Eriugenam (ob.* 877) nihilum illud, unde facta sunt omnia, est ipsa essentia divina, quæ *nihilum* dici potest, quatenus non est determinate quidpiam eorum, quæ *sunt.* Deus est essentia rerum omnium ; effectus sunt ipsa causa facta, seu, Deus fit in suis effectibus, « omnia creans in omnibus creatum ; et omnium factor in omnibus factum ».[3]

Amalricus Carnotensis (ob. 1209) docuit Deum esse principium formale rerum omnium : coævus ejus, *David Dinantensis,* « stultissime posuit Deum esse materiam primam » (**S. Th.**, 1. q. 3, a. 8).

14. Pantheismus recentis ætatis. *Jordanus Bruno (ob.* 1600), qui prælusit pantheismo Germanorum, docuit unicam esse substantiam, eamque esse simul infinitam potentialitatem *(materiam mundi)* et infinitam actualitatem *(formam mundi),* Deum igitur esse cum mundo identicum mundumque esse aliquod vivens et venerabile.

Spinoza (ob. 1677) suum systema fundavit in definitione substantiæ a Cartesio proposita *(Ont.,* n. 342). Juxta hoc systema illa unica substantia, quæ est prin-

which at one time—in the second century of our era—became the predominant philosophy of the Græco-Roman world, was a system of undiluted pantheism. It taught the absolute identity of nature and God. The universal substance was, it held, simultaneously matter and spirit: these being two aspects of the same reality, and not, as might appear, different the one from the other. From this substance all things, even the soul, are formed. (**Joyce,** *Nat. Theol.*, p. 481).

[2] Neoplatonism, the last effort of pagan philosophy to hold its own against the advancing tide of Christian thought, hardly, perhaps, deserves the name of pantheism, since it gave to God an existence outside the world. But it held all things to proceed from God by emanation, and hence to be formed of the Divine substance — (**Joyce,** *loc. cit.*).

[3] As far as we know, Eriugena is the only avowed representative of pantheism prior to the twelfth century. . . Subsequently, those who espoused pantheism were inspired by the Neo-Platonism of Eriugena, some of them more and some less — (**De Wulf-Coffey,** *History of Medieval Philosophy,* p. 172).

cipium intrinsecum omnium entium, instruitur duabus proprietatibus: infinita cogitatione et infinita extensione. Utraque proprietas per modos et modorum modos se evolvit, donec devenit ad modos omnino determinatos et finitos, qui sunt entia individua. Hinc, entia spiritualia sunt modi infinitæ cogitationis, entia materialia sunt modi infinitæ extensionis (cf. *Turner,* Hist. of Phil., pp. 469 sqq.).

15. Ex schola Kantii ortum duxit (sæc. 19) *pantheismus transcendentalis,* quem plures Germanici philosophi excoluerunt,[1] quorum notiores sunt *Fichte, Schelling,* et *Hegel.*[2] Horum systemata absurdiora sunt quam quæ a nobis explicari possint; in hoc tamen inter se conveniunt quod subjectum cogitans cum objecto cogitato confundunt.[3]

[1] Almost all the German philosophers who acknowledge Kant in any way — as most of them do — are pantheists of some shade or other; and that even though their several systems are so antagonistic that German post-Kantian philosophy has been not inaptly described as a « civil war of pantheism » — (**De Wulf-Coffey,** *Scholasticism Old and New,* p. 223).

[2] Kant began with making time and space subjective forms, and Fichte went on to make matter and God Himself a subjective creation of the mind. Schelling sought to enlarge the system by making mind and matter, God and the universe, at one and the same time ideal and real, — ideal on the one side, and real on the other; and Hegel came forward with an artificial dialect, to show how nothing could become something, and how God becomes conscious in humanity — (**M'Cosh,** *Intuitions of the Mind,* p. 452).

[3] The difficulty of attacking these ravings arises from the fact, that these new philosophers have had the humour to adopt a language so strange and enigmatical, that one is ever in doubt whether he has caught the true meaning of the author. Thus. . . if Hegel had simply said that in the world there is no more than one being, one substance which comprehends in itself the whole aggregate of whatever exists, adding, that what appear to us to be particular beings or substances, are nothing but modifications of the only substance that absorbs everything, we should know we had before us a professor of pantheism. . . But what can you do with a man who begins by talking of idea; of harmonious unity; of the aggregate that is eternally unfolding itself; of the idea which is reality itself; of being *in itself and for itself;* of transitions from virtuality to actuality; and all this for the purpose of telling that the entire universe is nothing more than a succes-

Pantheismus qui in operibus Rosminii invenitur vix a pantheismo transcendentali differt.[1] Quænam autem sit ejus propria forma eruitur ex propositione xii (inter quadraginta damnatas) in qua Rosminius docet Deum non aliter efficere, ut finita realitas fiat, quam *addendo infinitæ realitati limitationem, et esse initiale (i. e.,* essentiam divinam *ut cognitam) fieri essentiam omnis entis realis.*

Ex dictis in hoc articulo cuilibet compertum est omnes pantheismi formas in eo convenire, quod admittant primum rerum principium esse aliquid indeterminatum, quod successivis evolutionibus, mutationibus, et determinationibus sese circumscribit atque determinat ad varias realitates quæ creatæ et finitæ vocari solent. Unde, non est, cur de his pantheismi formis in specie agamus.

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sive development — (**Balmes**, *Letters to a Sceptic*, p. 159; cf. *Fundamental Philosophy*, v. ii., p. 409, sqq.).

[1] The Rosminians try to defend themselves by saying that pantheism consists in the unity of substance. This is a useless evasion. The pantheism expressed by unity of substance is that of Spinoza. But instead of unity of substance, the German pantheists substituted unity of being; which is fundamentally the same, but more philosophic. Now Rosminian pantheism takes its origin from the German pantheists. Likewise therefore it lays down the unity of being; and therefore denies creation properly so called, which has being for its term — (**Liberatore**, *On Universals*, p. 144).

«Qui patienter legat opera Antonii Rosminii, ejusque doctrinam attente consideret, facile perspiciet totius systematis radicem ac fundamentum ab ipso constitui universalem absolutamque unitatem *esse (dell' essere)* in rebus omnibus. Neque aliter sentit acerrimus ejus discipulus Illmus Dnus Ferrè, qui commemoratis rationalistarum in Germania conatibus sese elevandi ad altitudinem supremæ unitatis, hanc laudem Rosminio tribuit, quod ad eamdem speculationis sublimitatem animum erexerit. Rem etiam confirmat novissimus Rosminianæ doctrinæ advocatus qui *Romanum Antistitem* se vocat» — (**Mazzella**, *Rosminianarum Propositionum Trutina Theologica*, p. 5).

ART II.

DE MATERIALISMO.

16. Circa mundi originem non minus turpiter quam pantheistæ, erraverunt veteres et ex recentioribus non pauci, qui eum aliquo modo ex materia æterna prodiisse finxerunt.[1] Hi in explicando suo systemate, qui *materialismus* vocatur, duplici via procedunt, nimirum, mundum ortum duxisse alii affirmant ex materia æterna et increata per fortuitum atomorum concursum, alii per quandam materiæ evolutionem. Sit igitur sequens thesis.

17. THESIS II. — Falsa sunt asserta materialistarum circa mundi originem.

Stat. Quæst. — *Democritus, Epicurus* aliique veteres atomistæ existimabant mundum ex atomis *(i. e.,* corpusculis minutissimis) ab æterno in vacuo fluctuantibus, et tandem casu concurrentibus atque invicem cohærentibus, sine ulla causa externa et intelligente, originem habuisse. Tota diversitas, quæ inter corpora conspicitur, tribuenda est atomorum figuræ earumque diversitati combinationis. Materialistæ moderni ad mundi originem et efformationem explicandam confugiunt ad materiam æternam, quæ viribus æternis et increatis instructa, jugiter et necessario se evolvit, donec, variis evolutionis gradibus transactis, induxit primo organizationem vegetalium, deinde animalium, demum, culmen perfectionis assecuta, produxit hominem, cujus facultates rationales ex speciali dispositione materiæ cerebralis resultant.[2] Moderni a veteribus vix plus quam in modo loquendi differunt, quia,

[1] The philosophy prevalent in the universities is pantheism in one or other of its forms: while outside the seats of learning a more or less crude materialism has a wide vogue. Evolution is held to be a sufficient explanation of all things. It is believed that the primeval world-stuff somehow gave rise to living organisms, and ultimately issued in man — the less producing the greater, and perfectionless matter raising itself without efficient agency of any sort to those miracles of beauty and contrivance with which the world is filled — (**Joyce,** *Nat. Theol.,* p. 449).

[2] Materialism is a system of philosophy which recognizes the

quum tollant causam finalem et causam exemplarem, manet, ut mundus sit effectus ordinatus, qui casu prodiit.

Hæc est evolutio in maxime sua universalitate, prout hodie a pluribus scientiarum naturalium cultoribus ubique terrarum defenditur.[1]

Juvat thesim in tres partes dividere, quarum prima ostendet falsum esse fundamentum materialistarum, *scil.*, materiam esse ens a se et independens; altera et tertia pars confutabunt materialismum veterum et modernorum.

18. Prob. thesis. — PARS 1ª. *(materia non est ens a se).* **Arg. I.** — Ens a se est essentialiter unicum, infinite per-

existence of nothing else but ***matter*** and its properties. One of its ablest exponents defines it for us with sufficient precision as « that correlation of all the phenomena of the universe with matter and motion, which lies at the heart of modern physical science, and which most people call materialism » *(Huxley)*. In short, matter and motion constitute the origin, principle, and source of everything that exists, from the dead stone to the living plant or animal and the thinking man.

« Matter is the origin of all that exists; all natural and mental forces are inherent in it. . . Nature produces man by her own power, and takes him again » — *(Büchner)*. « I discern in matter the promise and potency of every form and quality of life » — *(Tyndall)*. « Not alone the more ignoble forms of animal life, not alone the exquisite and wonderful mechanism of the human body, but the human mind itself — emotion, intellect, will, and all their phenomena — were once latent in a fiery cloud. . . » *(Idem)*. Here on the very threshold of our subject we get a fair idea of what we are to expect from the scientific philosophers — (**Gaynor,** *The New Materialism,* p. 4).

[1] It must be borne in mind that « evolution » claims to be not a fact merely, but a principle. Not only, as we are told, have beings of various kinds been actually evolved, one from another, but there is a law in « nature » making such evolution imperative, which law is, indeed, supreme and paramount over all others, forcing them all to co-operate towards its own ends, and making its power felt in every department of the universe. Not only has there been organic evolution, producing the various species of plants and animals, but previous to this and preparatory for it, there was inorganic evolution of the material world, while subsequently there has been, and is still, mental evolution of individuals and sociological evolution of collective man. Such is the essence of the new gospel promulgated by Mr. Herbert Spencer and incessantly preached and popularized by the multitude of his disciples — (**Gerard,** *Evolutionary Philosophy,* p. 18).

fectum, immutabile et absolute independens, ut theodicæa demonstrat ; *atqui* nihil hujusmodi reperitur in materia ; nam ejus elementa, ut scientiæ physicæ agnoscunt, sunt plurima, undique limitantur, nobilissimis carent perfectionibus, continuo subeunt mutationes quoad positionem, actionem, mutuam conjunctionem ; ab invicem dependent, quum mutuo se attrahant repellantque.[1] Nullum igitur materiæ elementum est ens a se, et a fortiori ipsa materia, quæ ex his resultat elementis, nequit esse a se.

II. — 1°. Materia a se existens esset simul finita et infinita *quoad essentiam : (a) finita,* quia aliquid materia perfectius *(scil.,* spiritus) concipi potest ; *(b) infinita,* quia aseitas, utpote perfectio simplex *(Ont.,* n. 394), nullum perfectionis limitem includit ; et limites nequeunt ei forinsecus induci, quia ens a se, sicut in essendo, ita et in modo essendi, necessario est ab alio independens.[2]

[1] If atoms are absolute and eternal, they must also be immutable, for eternity is the measure of immutability. But atoms are not immutable, since mutability is the essential property of all bodies, which are supposed to be formed from them. If they exist absolutely and solely of themselves, whence comes their mutual limitation and dependence, and whence the « affinity of matter » and its « creative force » ? Again, these atoms. . . are unconscious, and yet consciousness is evolved from them ! — **(Hettinger,** *Nat. Religion,* p. 120).

[2] Either it (materia) was produced by a pre-existing being, altogether independent of it ; or it exists of itself as an absolutely necessary being, — one whose nature it is to exist. In this latter case, not only is the existence of such a being absolutely necessary, but its mode of existence must also be so. A self-existing being cannot exist otherwise than it does exist ; since its mode of existence is necessarily implied in its existence, it is absolutely unchangeable. Now how is it with matter ? is it unchangeable in its substantial mode of existence ? . . . You must have observed that the elements which go to make up matter are different in the simple from what they are in the compound ; oxygen and hydrogen have separately quite different qualities from those they have in water, their compound. Marble to the eye seems to be but one ingredient, but let it only be submitted to the glowing heat of the lime-kiln, and it is immediately decomposed into two totally unlike substances, quick-lime and carbonic acid gas. Now send a current of electricity through the former, and you have calcium, a light yellow metal, and oxygen ; while the latter, if suitably treated,

— 2°. Materia a se existens esset simul finita et infinita *quoad quantitatem : (a) finita,* quia omnis data quantitas limitatur quoad magnitudinem, figuram, partium numerum, nec potest illimitata esse ;[1] *(b) infinita,* quia nulla est determinata magnitudo vel multitudo, quæ præ ceteris cum essentia materiæ conjungitur, et quum in ente a se determinatio ab extra proveniens dari nequeat, actu infinita dicenda est.

— 3°. Materia a se existens *nec in motu esset nec in quiete : (a) non in motu,* quia in ente, quod excludit extrinsecam rationem suæ existentiæ, non aliæ inveniri possunt proprietates, nisi illæ, quæ ab ejus natura dimanant ; *atqui,* ex evidenti sensuum testimonio et consensu omnium physicorum inertiam materiæ profitentium, materia non est necessario in motu, sed ad motum et quietem indifferens ; *(b) non in quiete,* ob parem rationem.[2]

Jamvero, hæc omnia mutuo repugnantia attributa simul materiæ competerent, si hæc esset ens a se ; *ergo.*

19. Pars 2ª. *(ortus mundi explicari nequit per fortuitum atomorum concursum).* **Arg. I.** — Atomi, ex quarum for-

gives charcoal and oxygen. But farther back than calcium, charcoal and oxygen we cannot go : — in them matter has found new modes of existence — (**Ronayne**, *God Knowable and Known*, p. 14).

[1] An infinite number is inconceivable and impossible ; for we can add new units to any number or sum, but that which is capable of addition is plainly finite, otherwise the infinite would become still more infinite by the increase of each unit, which is a contradiction in terms — (**Hettinger**, *op. cit.*, p. 119).

[2] Matter cannot move itself, for, as we know from the first of Newton's great laws, a body at rest will continue at rest for ever unless acted upon by some force. It is true that in order to meet the difficulty thus created by the inertia of matter, Voltaire's friend, Baron Holback, boldly enunciated the principle that motion is an inherent property of matter, which of its own nature tends to move. But a doctrine so patently absurd has failed to obtain any acceptance. Not only does it contradict all experience, but on very slight examination it is seen to have absolutely no meaning. If matter tends to move, it must be in some one definite direction. A tendency to move indifferently in every direction at once, would anchor it to the position actually occupied, like the rope in a « tug-of-war » when the rival parties are equally matched — (**Gerard**, *op. cit.*, p. 25).

tuito concursu mundus prodiret, vel ex sua natura, et proinde necessario, haberent unum determinatum motum et determinatam motus directionem, vel ad motum et motus directionem indifferenter se haberent ; *atqui* in primo casu, atomi non possent ad quietem reduci, nec a determinata motus directione deviare, ut sibi impingerent ad corpora constituenda ; in altero casu, agnoscendum est ens externum, a quo atomi habent motum et motus directionem, et ruit materialismi fundamentum ; *ergo*.

II. — Hypothesis fortuiti atomorum concursus nihil explicat ; *ergo*. *Prob. antec.* *(a)* Non explicat *originem* atomorum, quarum concursu mundum constitui fingit. *(b)* Non explicat *ordinem* complicatissimum, qui ubique in mundo et inter ejus partes elucet ; experientia enim universalissima comprobatur res inter se diversas numquam se disponere vi sua propria ad aliquem ordinem constituendum et finem consequendum, sed semper passive se habere sub influxu alicujus causæ eas ordinantis et in finem dirigentis. Nec valet provocare ad leges materiæ ac vires attractivas et repulsivas atomorum, quia sic materia supponeretur jam disposita ad mundum constituendum, et redit quæstio unde hæc atomorum dispositio.[1] *(c)* Non explicat *perennitatem* ordinis mundani, immo, pro causa ordinis ponit quod natura sua ordinis eversionem conficeret. « Etsi enim dare adversariis vellemus atomos, servatis debitis conditionibus, in compositiones ordinatissimas casu concurrere atque ita hunc

[1] If materialists allege that these different qualities (quæ corporibus competunt) proceed from the various configurations, groupings, and combinations of matter, which is itself without properties, still more do we insist : Whence come these differences of forms, groupings, combinations? Whence have these atoms this order and form, and an order and form which endures as a permanent rule and law? If from themselves, they must be intelligent beings ; they must be mind and not matter. If they proceed from another who determined their being, their different combinations, and their conformity to law, then that other must be He who, the Scripture says, ordered all things in number, weight and measure — **(Hettinger, *Nat. Religion,* p. 121)**.

ordinem potuisse efficere, nullo tamen modo declararetur, quo pacto ordo ille casu ortus, stabilis et imperturbatus perduraret. Ad hoc enim atomi innumerabiles non semel sed sexcenties, immo infinities ad compositiones ordinatissimas efficiendas deberent concurrere idque *casu*. At inconstantiæ, at perturbationis, at difformitatis casus est principium; ergo ne vestigium quidem præbet explicandæ stabilitatis, ordinis, conformitatis » — (**Tilm. Pesch**, *Phil. Nat.*, v. ii., p. 193).

20. PARS 3ª. *(origo mundi explicari nequit per materiæ evolutionem).* **Arg. I.** — Evolutio in sensu materialistarum est jugis mutatio materiæ in alias atque alias species rerum interna vi et necessitate ipsius materiæ ;[1] *atqui* talis evolutio experientiæ et rationi adversatur ; *ergo* non est admittenda.

Prob. min. 1°. *Adversatur experientiæ* et sane non modo individuorum, sed totius generis humani, quæ testatur species corporum esse fixas, nec reperiri posse exemplum, ne unum quidem, conversionis minus perfectæ speciei corporis in speciem perfectiorem, nec posse individua certæ speciei oriri nisi ex definitis causis, ut chimici et biologi scientifice norunt. Quæ omnia ipsi evolutionistæ concedunt de speciebus corporum, prout impræsentiarum existunt, in præteritis autem temporibus res aliter se habuisse contendunt ; sed illogice, quum juxta hos philosophos præter experientiam nullum aliud detur medium cognitionis et certitudinis.[2] Experientia autem

[1] The atheist and the agnostic eliminate the idea of a Creator, and reduce everything to the action of atoms and forces supposed to be practically and inherently omnipotent. They thus make of these atoms and forces a supreme god, attributing to them the same powers assigned by the theist to the Creator — (**Dawson**, *Modern Ideas of Evolution*, p. 49).

[2] Materialism postulates sense perception as the only test of truth, and affirms that the « investigations of the microscope and physical measure and weight are the only media of true knowledge and exact definition ». « The natural philosopher, » says Buchner, « only recognizes bodies and their qualities. All beyond this he calls transcendental, and transcendentalism is with him an aberration of the human intellect ». « Sensible experience is the limit of

ad summum docet quales res sint, non vero quomodo ortæ sint.

2°. *Adversatur rationi,* quæ exposcit, ut quidquid producatur vel evolvatur, causam sibi proportionatam habeat ; *atqui* vires materiales sunt prorsus impares ad producenda organa et præsertim eas facultates, quæ, ut earum operationes evincunt, sunt alterius et altioris naturæ quam materia materiæque vires. Nam quum nihil det nisi quod habet, constat quamdam causam cuidam effectui non esse proportionatam, nisi perfectionem tali effectui saltem æqualem in se possideat.[1]

21. II. — Systema, quod originem mundi explicaret per activam evolutionem materiæ primitivæ, plura falsa continet ; *ergo* rejiciendum est.

1°. Falsum est principium a materialistis gratis assumptum, *scil.,* nullam concipi posse vim nisi materialem. Vis enim principium activitatis significat ; quod autem existat hujusmodi principium omnino immateriale demonstratur in psychologia, nec quemquam latet se habere vim volendi, quæ nulla vi materiali superari potest.[2]

human thought » (Vogt). « All our knowledge is sensible » (Moleschott) — (**Hettinger**, *op. cit.,* p. 118).

[1] We cannot imagine the development of reason from that which has no reason, and must admit that only the « inspiration of the Almighty » could have given understanding. The inherent absurdity of the evolution of powers and properties from things in which they are not even potentially contained appears nowhere more clearly than here — (**Dawson**, *op. cit.,* p. 201).

Even so thorough-going an evolutionist as Weismann rejects the notion of eternal matter as an adequate substitute for a First Cause. — « The assumption of eternal matter with its eternal laws by no means satisfies our intellectual need for causality » — (**Gaynor**, *op. cit.,* p. 133).

[2] Out of the energy of will every one is conscious that he can generate force, while he is also conscious that he can communicate the same to nerve and muscle, can set his whole frame in motion, or endow it with new strength for endurance. The body fitted for action by its structure does not act, however, or move, but under the influence of the will, and in the case of animals, under the impulse of instinct. We have here the mechanism of the human frame applied to its different functions by the energy of

2°. Falsum est materiam sine influxu causæ exemplaris et finalis sibiipsi elargiri potuisse ordinem pulcherrimum, quem in rebus materialibus conspicimus. Sublatis enim causa exemplari, secundum quam res confici debent, et causa finali, in quam dirigi debent, vires materiæ respectu operis ordinati non possunt esse nisi causæ cæce et inordinate operantes, et, quod consequens est, mundus, prouti est, esset effectus fortuitus et casui debitus. Quare, causæ exemplaris et finalis indigent tamquam medio causa mechanica; hæc vero eas præsupponit.[1]

3°. In hypothesi, quod vires materiæ necessario agunt eo modo, quo revera agunt, et materia necessario constat talibus elementis, qualibus de facto constat, adhuc impossibile et proinde falsum manet ipsam materiam potuisse sibi donare eam positionem et distantiam requisitam, ut incipiat per mutuam elementorum actionem et reactionem prædicta evolutio. Elementa enim materiæ, sicut non possunt seipsa determinare quoad numerum, sed ad illum indifferenter se habent, ita etiam,

the will, or by force generated by an immaterial substance. Not only that, but outside himself man can so combine or control force as to make it subservient to his purpose — (**Ronayne**, *op. cit.*, p. 161).

[1] In attempting to explain the origin of things by mechanical forces alone we are attempting a task which is, and must ever remain impossible. Granting all that our scientists assert, the question of the ultimate cause remains still unanswered. «I believe,» says Professor Weismann, « that the theory of selection by no means leads — as is always assumed — to the denial of a teleological universal cause and to materialism. . . *Mechanism and teleology do not exclude one another, they are rather in mutual agreement.* Without teleology there would be no mechanism, but only a confusion of crude forces; and without mechanism there would be no teleology, for how could the latter otherwise effect its purpose ? »

It is well to insist on this truth, obvious though it be. Scientists too often are so overcome by the wonders they meet in nature as to make mechanism itself the object of their homage. But this, under the style and title of science, is thinly disguised fetishism. The idea of mechanism is altogether unmeaning without that of the end which it subserves, and of the Designer who contrived it, and it is to Him that the universe bears witness — (**Gerard**, *Science and Scientists*, p. 59).

quantum ad seipsa attinet, non postulant unam positionem præ alia, nec statum liquidum vel aeriformem præ solido et immobili, in quo nullus dari posset mutuus influxus.[1]

[1] Confining ourselves to our own system of sun and planets, we are told, and with every appearance of probability, that the original condition of the matter composing them was a vast « nebula » — a sort of cloud or vapour — wherein the countless multitude of atoms, now packed together in solid bodies, far apart from one another, as an enormous sphere more than seven thousand millions of miles in diameter, filled at least the whole space between the sun and the outermost of the planets, probably extending far beyond.

In this condition, which we have to postulate in order to account for what follows, there is one element for which science can in nowise account, and to which are due all those operations whereof she takes cognizance — the position of the atoms far apart. Had they been close together the world that we know would never have been; while to drive them apart a force is needed whereof we find absolutely no trace in physical nature.

That the world should become the theatre of those manifold laws which we daily witness in operation, it was absolutely necessary that there should be available a store of power capable of doing the work required, just as to drive a mill by waterpower we must have a reservoir higher than the wheel to be turned, or to make a clock go the weights must be raised, which in their descent are to supply motive power for the machinery. In these cases and all others where the operations of nature are performed, we require first that bodies be placed in a condition different from that towards which their own inherent forces tend to bring them; and it is the play these forces find in reasserting themselves that gives them the opportunity of acting. . . The original situation of the particles composing the world at a distance one from another, was exactly analogous to that of the clock-weights when raised to their highest point. They were in an unstable position, in a position contrary to that whereto their own forces tend to bring them, and it is their constant running down towards that position that is the main and most essential factor in the work of nature. Given motion, we at once get heat from the friction or impact of particles and particles. Given variation of heat, we get change of chemical combination; similarly we get electrical action; all, in brief, that we have in the way of active forces in nature, we owe to the fact that the world was at starting in a condition to change itself by its own forces. . . In all this it is hard to discern the presence of evolution, ruling from end to end, and dispensing with the need of anything but itself to explain the totality of things. Yet such, be it remembered, is the claim set up on behalf of the new doctrine — (**Gerard**, *Evolutionary Philosophy*, pp. 19-24).

22. Cor. — Ergo plurima et inter se diversa entia nequeunt conspirare ad unum ordinem constituendum, nisi detur aliquod ens intelligens ea inter se coordinans et in finem dirigens. Ordo enim est apta dispositio plurium ad finem. Qui igitur cum ordine agit et plura entia ita ad invicem disponit, ut rationem finis vel medii relate ad alia habeant, debet esse intelligens ; nam finem ordini præfigere, media apta accommodare, ac plura entia ad utrumque subordinare solum est comparantis et judicantis (*i. e.,* intelligentis); nec aliter secernimus hominem minoris intelligentiæ vel amentem ab aliis quam per defectum ordinis et finis in ejus sermone vel opere.[1]

[1] Raffaele could paint that Lily of Israel, that Rose of Sharon: but he could not create this tiny flower in my fingers. Yet, here, too, is type, and method, and plan and — mind. Who can deny it? If only mind could create a Sistine Madonna, how could chance create that which is greater, lovelier? Chance could not draw a line of her garments, nor give a hue to her cheek. Chance could never put that mother's look in the soft brown eyes; nor that dreamy farsight into the eyes of the Child. Gather all the azures, and ochres, and browns, and scarlets that are scattered in plant and mineral throughout creation, and cast them down on a palette. Heap together pencils and brushes. Draw the canvas tight and call on chance to paint a cherub's face or the trumpet of an archangel. You will wait for eternity before chance will come to your beck and call. And, how, then, could unconscious chemistry — the mere fortuitous coincidence of atoms — create this floral beauty that springs from the dull, brown clods of my garden beds? Here is a little water and a little oil — that is all! Who combined them in such lovely form? Has water these potencies of colour in itself: and has oil in itself that sweet, subtle fragrance? And this outward curve, like a lip turned backwards in the coquetry of anger, who hath given it? And who has stopped the flame-red that burns from the bottom of the chalice, and toned it away into beautiful saffron, which itself fades away at the lips? « Chance! » « Unconscious chemistry! » It is against all the traditions of our experience — all the arguments of a reasoning mind. « We don't know ». Well, that at least is humble — just a shade better than the sneers of a positive infidelity. I have no right to find fault with the wayside beggar whose breast is burdened with the speaking tablet: *I am blind!* It is his misfortune, and an unspeakable one. So, too, when a man says: « I have no faith. I do not know or believe ». I have hardly the privilege of being angry with him. It is only when he comes to positive assertion or denial that I am privileged not only to pity his ignorance, but to refute it. If such a one came before the Sistine Madonna and said: « It is a daub; the colours

Jamvero, quod ad terram nostram attinet, ordo totius et subordinatio partium ad diversos fines manifestæ impudentiæ arguunt eos, qui eam esse opus supremæ sapientiæ negare non erubescant. Nam iste ordo est: —

1°. « *Complicatissimus*. — Nempe ad eum constituendum suo loco et suo modo concurrunt innumeræ res eæque genere, specie, individualitate diversissimæ et numerosissimæ. Hæ vero res innumeræ constituunt iterum ordinem complicatissimum ; cogita, *e. g.*, de complicatione unius organismi.

2°. «*Sublimissimus*.—Nempe scientiæ plurimæ et hominum doctissimorum ingenia omnem operam in eo intelligendo ponunt. Mirabilia sunt, quæ invenerunt et tradunt. Tamen quo scientia magis proficit, eo magis intelligimus longe plura ignorari ; immo ea, quæ scimus, quamvis sint stupenda, nihil esse in comparatione eorum, quæ nos latent.

3°. « *Constantissimus*. — Tanto enim sæculorum cursu jam perseverat in summa omnium volubilitate et caducitate. Jam, quum ordo vel pro uno instanti complicatissimus sit, quot vires, quot actiones conspirantes tanto tempore factæ sunt ? Et hæ vires omnes, quamvis sub diversissimis agerent locorum et dispositionum adjunctis, ab ordine non deviarunt. Semper etiam cohibitæ sunt vires destructivæ, ne omnia ad chaos reverterentur » (**Hontheim**, *Theod.*, p. 172).

4°. « *Utilissimus*. — Nam, ut de organicis sileamus, in rebus inorganicis universalis corporum inter se attractio ad eum modum temperata est, ut inde ordo summa

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are badly laid and the drawing is but second hand », the artists sitting around would promptly expel him as a sacrilegious inept... And if he went further and declared: « Raffaele Sanzio never existed. What you behold is the fortuitous result of a few pieces of carmine, ochre, and cobalt, which came together by chance, and wrought themselves into the face and figure of a Woman and Child », they would probably hand him over to the Commissioner of Police. Yet all this is what we read in the ravings of materialism and positive philosophy — (**Sheehan**, *Under the Cedars and the Stars*, p. 206).

dignus admiratione per universum mundum pertingens emergat: tanta lux celeritate per omnes partes diffunditur, ut res debito modo oculis patefiant ; aeriformium corporum proprietates chimicæ ita determinatæ sunt, ut, quæ eis constet atmosphæra, ad vitam organismorum aptissima evadat; aer ipse ea præditus est elasticitate, quæ sono propagando summopere conferat; cohæsio denique atque expansio, quibus typus cujuslibet corporis in ordine physico constituitur, eo gradu et modo adsunt, ut corpora omnia in hac rerum universitate mutua cum harmonia atque quasi quadam concordia simul esse unaque agere possint. Cujus generis innumerabilia alia sunt exempla quorum moles eo magis crescunt, quo plura in dies variæ naturales disciplinæ nova atque abscondita proferunt. Hæc omnia qui diligenter consideraverit, non dubitanter dicet ex nulla interveniente tendentia finali evenire non posse» (**Pesch**, *Phil. Nat.*, v. i., p. 91).

23. Obj. 1. — Inter possibiles atomorum combinationes fuit præsens mundi dispositio ; *ergo* non repugnat quod mundus, prouti est, casu eveniret, sicut non repugnat quod ex litterarum congerie vicibus indefinitis ex urna projectarum enasceretur quoddam poema.

Resp. — *Dist. antec.* Inter combinationes intrinsece possibiles, *conc.* ; inter combinationes extrinsece possibiles, *subdist.* ; admissa causa intelligente et dirigente, *trans.* vel *conc.* ; tali causa non admissa *neg.* Ut in exemplo allato paritas habeatur, opus esset supponere litteras casu fuisse formatas, casu eas esse ejusdem idiomatis, casu eas in aliqua urna fuisse contentas et casu inde projectas, et quidem eodem loco et cum æquali impulsu, ne in spatio dispergerentur. Hæc et alia absurda supponenda sunt ad paritatem requisitam constituendam.[1] Unde sicut metaphysice re-

[1] Calculez, si vous pouvez, le nombre prodigieux des combinaisons possibles de vos atomes d'après les exemples suivants. Huit lettres de l'alphabet . . . peuvent se combiner de 40,320 manières différentes ; . . . 12 personnes autour d'une table de 12 couverts peuvent se ranger de 479,001,600 manières différentes ; entre deux joueurs de dominos, qui prendraient 7 dominos, chacun, on a calculé plus de 137 milliards de parties possibles différentes. L'imagination recule effrayée devant ce résultat : que serait-ce si elle essayait de calculer le nombre des atomes contenus dans le seul globe terrestre . . . et le nombre de leur combinaisons possibles ? Tous les édifices contenus dans les cinq

pugnat effectus sine causa proportionata, ita metaphysice repugnat, quod opus constanti ordine instructum casu originem habeat.

Obj. 2. — Ratio reddi potest ordinis et dispositionis rerum, si in natura supponantur quædam vires constanter operantes.

Resp. — Si simul supponatur causa, quæ has vires materiæ communicavit easque in operando dirigit, *conc.*, secus, *neg.* Materialistæ sic objiciendo per « naturam » aut intelligunt aliquid *in abstracto,* et tunc verbis ludunt, quum hujusmodi nequeat ullius rei esse causa ; aut intelligunt aliquid ***in concreto ;*** tunc vero « natura » erit ipsa congeries rerum viriumque materialium, et habetur petitio principii ; aut intelligunt aliquid a materia distinctum, et proinde immateriale et intelligens, quod non temere sed consilio et quidem supremo, operatur et universitatem rerum ad finem ultimum dirigit.

CAPUT SECUNDUM.

De Mundi Creatione, Formatione, Finalitate.

Vera doctrina circa mundi originem ea est, quæ tenet mundum totum a Deo tamquam a prima sua causa per creationem libere peractam ortum et ordinem sumpsisse.[1] Hanc doctrinam, quam Fides Catholica aperte docet, sane philosophia efficacissimo ratiocinio demonstrat. Facto autem creationis statuto quæri potest quinam fuerit primus mundi a Deo conditi status, necnon quinam fuerit ordo, quo tota universitas corporea formata atque perfacta fuit, quænam fuerit ejus causa finalis. Unde tres hujus capitis articuli.

parties du monde ne suffiraient pas pour contenir les manuscrits nécessaires aux calculateurs. Et si nous ajoutons que notre globe n'est qu'un point infiniment petit dans l'immensité des cieux, nous pouvons conclure que le nombre total des combinaisons des atomes de l'univers peut être pratiquement considéré comme infini — (**Farges**, *L'idée de Dieu,* p. 170).

[1] « Quæstio de creatione per se pertinet ad theologiam naturalem ; sed per accidens convenienter ponitur etiam in philosophia naturali. Tractatus enim cosmologicus non est completus nisi sermo fiat de omnibus causis mundi, et proinde nisi sermo fiat de modo quo mundus procedit a causa efficiente per creationem — (**Hugon**, *Acta Hebd. Thomisticæ, Nov.* 1924, p. 257).

ART. I.

DE MUNDI CREATIONE.

1. De Creationis Notione.

24. Vox creatio, quæ apud veteres profanos auctores non aliud significavit quam effectionem vel productionem alicujus rei, novam eamque specificam significationem sortita est penes scriptores christianos, qui per eam designare volebant eminentissimum modum efficiendi Deo soli proprium, quo res, quæ prius nullo modo existebat, existentiam accipit. Creatio igitur sensu stricto definitur: *productio rei ex nihilo sui et subjecti.*

Exponitur definitio.—Creatio est species productionis; jam, id, quod producitur, suæ productioni non præexistit. Unde, in omni productione, sive creativa sive non, res producta fit ex *nihilo sui*, et proinde, quod ad hæc verba attinet, creatio cum aliis productionibus convenit.[1] Quando autem additur *et subjecti,* ponitur differentia creationis specificativa et ab aliis productionibus (generatione et alteratione) distinctiva. Istæ enim præsupponunt subjectum, in quo actio agentis recipiatur, et ex quo effectus educatur; per creationem vero res producitur secundum se totam, nullo adhibito subjecto, ex quo, tamquam ex causa materiali, res fiat. Brevi: *Nihilum sui* est negatio rei, *quæ* producitur, *v. g.,* statua *qua talis.* — *Ni-*

[1] Creation in the wider sense of the word, signifies a change produced in things already existing, or in the relations between them. Thus we say that men of genius *create* works of art, that the Pope *creates* Cardinals, that a speech *creates* a sensation. It is evident that in the production of every such change something is originated which did not exist before; for if nothing at all resulted but what there was already, there would be no change. On this ground we might be tempted to say that every production is creation out of nothing. However, this is true only in a limited sense, inasmuch as the *result of the change* was previously nothing and has now become something. It is not true that there was no substratum or subject pre-existing which underwent the change. More strictly speaking the change of a thing is not produced *out of nothing,* but out of *something changeable* — (Boedder, *Nat. Theol.,* p. 109).

hilum subjecti est negatio subjecti, *ex quo* effectus producatur.

25. Consectaria. — **1.** 'Ex nihilo' non est accipiendum *positive,* ac si *nihilum* esset causa materialis, quæ actu creationis in ens aliquod transformatur; sed *negative,* ad indicandam *(a)* negationem subjecti præexistentis, ex quo res fiat; *(b)* successionem τοῦ esse rei ad ejus *non-esse,* ita ut prius sit *non-esse,* tamquam terminus *a quo,* et postea *esse* tamquam terminus *ad quem*.[1] Observandum autem est in creatione minime inveniri veri nominis mutationem vel successionem; tunc enim mutatio locum habet, quando aliquid aliter se habet prius et postea *(Ont.,* n. 406), id quod procul dubio dari nequit absque aliquo subjecto, quod ex uno statu transeat in alium. Pari ratione excluditur successio, quum hæc postulet subjectum, quod ad terminum progrediatur.[2] Unde, «in creatione. . . non potest accipi aliquid idem aliter se habens nunc et prius, nisi *secundum intellectum tantum*; sicut si intelligatur aliqua res prius non fuisse totaliter, et postea esse» (**S. Th.**, 1, q. 45, a. 2, ad 2).

[1] The classic definition of creation is: ***Productio rei ex nihilo sui et subjecti, i.e.,*** the production of a thing from nothing in the sense that before its production neither the thing itself existed, nor did any subject-matter exist from which the thing could be fashioned. An illustration may be drawn from ordinary work. Thus a carpenter may carve a piece of furniture from a block of wood or a sculptor may chisel a statue from a rough piece of marble. Neither the one nor the other existed as such before the workman fashioned them; hence he is said to have produced them ***ex nihilo sui.*** But the material existed: this the workman did not make; hence he did not produce the statue ***ex nihilo subjecti*** — (**Driscoll,** ***Christian Philosophy: God,*** p. 202).

[2] The preposition ***ex,*** «out of», in the above definition does not, of course, imply that ***nihil,*** «nothing», is to be conceived as the material out of which a thing is made — ***materia ex qua*** — a misconception which has given rise to the puerile objection against the definition of creation conveyed by the phrase, ***ex nihilo nihil fit*** — «nothing comes of nothing». The *ex* means ***(a)*** the negation of prejacent material, out of which the product might otherwise be conceived to proceed, and ***(b)*** the order of succession, viz., existence after non-existence. It follows, therefore, that (1) creation is not a change or transformation, since the latter process includes an actual underlying pre-existent subject that passes from one

2. Sola subsistentia proprie creantur. Illud enim proprie creatur, quod proprie habet esse, *sicut esse ita fieri; atqui* esse proprie competit subsistentibus, cetera enim non sunt id *quod* habet esse, sed id *quo* aliquid est. «Sicut igitur accidentia, et formæ (inferiores), et hujusmodi, quæ non subsistunt, magis sunt coexistentia quam entia; ita magis debent dici concreata quam creata» (S. Th., *ib.*, a. 4). Tamen, quum naturæ accidentis non sit absolute repugnans, ut conservetur sine subjecto, ita etiam non ejus naturæ, sed ejus consentaneo modo fiendi, adversatur creatio. Utrum inferiores formæ substantiales creari possint, controvertitur.

Quare, res per creationem effectæ hæ sunt: *(a)* entia pure spiritualia (angeli); *(b)* animæ rationales, quippe quæ nec in fieri nec in esse pendent a materia; *(c)* materia prima simul cum ejus formis primitivis.

3. Allata creationis definitio desumitur a termino *a quo*. Triplici alio modo creatio a *S. Thoma* definitur: 1°. *ratione termini ad quem*, sub quo respectu creatio dicitur productio rei *secundum totam suam entitatem*, i.e., non modo secundum formam, sed etiam secundum materiam, si res sit materialis; 2°. *ratione objecti formalis*, et sic creatio dicitur productio entis *in quantum est ens*, i.e., actio creativa, secus ac aliæ actiones, terminatur ad ens *simpliciter*, non ad ens jam existens, ut fiat *tale* ens;[1] 3° *ratione causæ efficientis* creatio definitur *emanatio totius entis a causa uni-*

real state to another, which subject creation positively excludes; (2) it is not a procession within the Deity, like the inward emission of the Divine Persons, since its term is extrinsic to God; (3) it is not an emanation from the Divine Substance, since the latter is utterly indivisible; (4) it is an act which, while it abides within its cause (God), has its terms or effect distinct therefrom; formally immanent, it is virtually transitive; (5) including, as it does, no motion, and hence no successiveness, it is an instantaneous operation — (**Siegfried**, *Cath. Encycl.*, v. iv., p. 470).

[1] To mark off the concept of creation from all those other kinds of purely formative production, which merely effect accidental changes in an already existing substance, the Angelic Doctor defines it as «the production of being, as being». Being, as such, is opposed not only to this or that concrete being, but to pure nothingness — (**Pohle-Preuss**, *God the Author of Nature*, etc., p. 7).

versali (Deo). Quæ definitio ne perperam intelligatur, præ mente habendus est duplex sensus, *genericus* nimirum et *specificus,* quem habet vox « emanatio ». Generice sumpta significat originem effectus a sua causa, quin *modum* originis determinet ; et in hoc sensu creatio recte dicitur emanatio. Specifice sumpta includit *modum* originis, et significat processum unius rei ab alia cum aliqua substantiæ communicatione, a qua procedit ; quo sensu pantheistæ dicunt mundum esse Dei emanationem.[1]

26. Creatio activa et passiva. — Creatio considerari potest *active* et *passive*. *Active* est *ipsa actio divina, qua res ex nihilo producitur*. Quum autem actio divina sit prorsus eadem ac divina essentia, creatio activa dici potest divina essentia, prout relationem (logicam) habet ad rem creatam. *Passive* est *ipsa res creata, prout relationem habet ad Deum*. Hæc relatio (realis) consistit in dependentia creaturæ a Deo tamquam a principio sui esse *(Ont.,* n. 380, 2°). Unde, creatio est actio *formaliter immanens, virtualiter transiens: — formaliter immanens,* quia in sua entitate non differt a divina essentia ; *virtualiter transiens,* quia illa actio id habet proprium, quod, dum perfectissime identificatur cum divina essentia, tanta perfectione et efficacia pollet, ut sine ulla sui mutatione possit existentiam rebus impertire, quando et quomodo velit. Nam si actus voluntatis sit infinitæ perfectionis, ejus efficacia erit pariter infinita, nec indigebit potentia executiva ad effectus productionem, sed ex se efficax erit. Ita communiter theologi et philosophi post S. Thomam.

27. Obs. — Nonnulli cum *Suarez* (Meta. *Dist.* 20, s. 5, n. 21) docent creationem activam esse formaliter transeuntem, seu, eam non esse Deum sed aliquid extra Deum. Quæ sententia fundari videtur in principio, quod actio et passio sint idem ; et id, quod

[1] « La création peut s'appeler une ***participation*** à l'être divin. Ce mot revient souvent dans les écrits de S. Thomas, mais il exprime une participation par similitude et non par fractionnement. . . Le Docteur angélique va même jusqu'à employer le mot *d'émanation,* mais il est clair que c'est encore dans le même sens, et non dans le sens réaliste, que nous lui donnons aujourd'hui plus communément » — **(Farges, *L'idée de Dieu,* p. 455).**

est passio, prout in subjecto recipitur, dicitur actio, prout pendet ab agente (*Ont.* n. 389). Quod principium, licet verum sit respectu actionis creaturæ, falsum est respectu actionis divinæ. Nam imprimis in eductione rerum ex nihilo, non datur subjectum, cui applicetur vis creans, et proinde deest passio proprie dicta. Præterea, intelligi nequit quid sit hæc creatio activa extra Deum. Non enim potest esse quid *increatum*, ut patet; nec quid *creatum*, quia tale ens esset terminus actionis creativæ; nec *modus*, quia modus exigit suum subjectum jam creatum, de quo subjecto præcise agitur. Denique, hæc sententia intactam relinquit quæstionem, quid sit illud, per quod creatura a Deo procedit; ad quam quæstionem solvendam necesse est admittere aliquid in Deo, quod suppeditet rationem effectus ad extra. Hæc autem ratio debet esse divina potentia (voluntas); atvero potentia in Deo, secus ac in creaturis, non est principium actionis (quum divina actio sit ipse Deus) sed creaturarum, quas producit absque ulla applicatione ad subjectum extrinsecum, atque ideo actio creativa est formaliter in Deo seu *formaliter immanens*. Brevius: actio creativa, quum desit subjectum in quo operetur, nequit esse formaliter transiens. Exinde sequitur eam esse *virtualiter transeuntem*, quum repugnet, ut actio sit formaliter immanens et formaliter transiens seu non immanens.

§ 2. De Creationis Possibilitate.

28. THESIS III. — Creatio mundi nullam involvit repugnantiam.

Stat. Quæst. — Fides nos docet mundum fuisse ex nihilo creatum, et proinde ab *esse* ad *posse* circa ejus creationem valide concludimus. Inveniuntur tamen, qui ex una parte doctrinam Fidei non accipiant, et ex altera (quia erroribus atheismi, pantheismi, materialismi inficiuntur) notionem creationis tamquam figmentum absurdum risu potiusquam cogitatu dignum respuant.[1]

[1] Materialists, of course, reject the idea of creation. According to Häckel the idea of a personal creator could only have arisen in the minds of the 'missing links' while they were being slowly evolved from apes into men! Vogt says: 'The Creator must be put out of doors unceremoniously, and we cannot allow the least room for the operation of such a being.' Darwin, in his *Origin of Species*, uses the words *creator, creation*, several times. Referring to this in a letter (1863) he says: — 'I have long regretted that I truckled to public opinion and used the Pentateuchal term of *creation* by which I really meant *appeared* by some wholly unknown process.'

Herbert Spencer refers the doctrine of special creation to that

Licet ratio humana possit suis viribus notionem creationis acquirere, tamen ex philosophis antiquis, qui lumine Revelationis caruerunt, vix est qui genuinam hanc notionem attigerit. Nec id mirum; nam res sensibiles, ex quibus omnes ideas nostras haurimus, haud possunt intellectui nostro suppeditare imaginem productionis «ex nihilo subjecti», sed imaginem prorsus contrariam, *scil.*, ex subjecto.[1] Sunt qui putent Aristotelem hanc notionem

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pet limbo of his — 'the family of extinct beliefs.' In one of his latest pronouncements on this subject he says: 'The observed facts of daily experience, proving a constant order among phenomena, negative the hypothesis (of special creation).'

The argument here advanced against the existence of a Creator is so peculiar as to call for some special notice. It rests on the extraordinary assumption that such a being could not refrain from constant and arbitrary interference with the order of nature. The idea of a Supreme Being that presents itself to the mind of the materialist is some monstrous embodiment of irresponsible power totally unchecked by adequate wisdom or forethought — a sort of celestial Nero whose existence would mean cosmical chaos. Obviously our only answer to this strange argument is *transeat.* We never dreamt of tracing the existence or order of nature to such a *monstrum horrendum* as our materialistic adversaries conjure up. Our contention stands clear of all such fantastic nonsense. That a being possessed of infinite power should have created the things that are, and with infinite wisdom should have impressed on them the laws by which they were to be governed, embodies no contradiction that unprejudiced reason can see. Nay, this very order of nature can be reasonably accounted for on no other hypothesis than that of an infinitely intelligent First Cause — **(Gaynor,** *op. cit.*, p. 20).

[1] Though the idea of creation is self-consistent and naturally attainable by the mind interpreting the world in the light of the principle of causality, nevertheless such is not its actual source. . . . Probably the idea of creation never entered the human mind apart from Revelation. Though some of the pagan philosophers attained to a relatively high conception of God as the supreme ruler of the world, they seem never to have drawn the logical inference of His being the absolute cause of all finite existence. The truth of creation, while not a mystery — not supernatural in its very nature *(quoad essentiam)* — is supernatural in the mode of its manifestation *(quoad modum).* Implicitly natural, it is explicitly revealed — **(Siegfried,** *Cath. Encycl.*, v. iv., p. 470).

Human reason is indebted to divine revelation for the true concept of creation, which philosophy *might* have found, but in matter of fact *did not* find — **(Pohle-Preuss,** *op. cit.* p. 8).

revera consecutum esse, et certum est apud ipsum inveniri omnia principia *(v. g.,* de actu, de primo motore), ex quibus veritas creationis logice fluit; communiter tamen edocti in ejus operibus affirmant eum non ausum esse hanc conclusionem deducere.[1] Idem de Platone sentiunt.

26. **Prob. Thesis. Arg. I.** — Ut creatio censeatur possibilis, duo requiruntur et sufficiunt, *scil.,* — 1°. ut habeat possibilitatem intrinsecam, seu, ut ejus notio non sit in se repugnans; 2°. ut habeat possibilitatem extrinsecam, seu, ut ens virtute creandi præditum existat. *Atqui* utraque pars admitti debet; *ergo.*

Probatur pars 1ª *minoris.* **Notio creationis non est in se repugnans.** Hæc enim repugnantia, si adesset, inveniretur *(a)* aut in novitate substantiæ, *(b)* aut in termino *a quo* productionis, *(c)* aut in termino producto. *Atqui (a) repugnantia non habetur in novitate substantiæ;* hæc enim in eo tantum consistit, quod res, quæ prius non existebat, existentiam accipiat; et quotidie locum habet in synthesi chimica, et in ortu plantarum, animalium, hominum. *(b) Repugnantia non habetur in termino a quo productionis,* i.e., in productione ex nihilo, quia talis modus producendi excellentiam et dignitatem hujusmodi productionis,

[1] Aristote comprit sans peine que ni la matière informe ni les formes séparées de la matière ne peuvent exister en elles-mêmes; c'est pourquoi il soutient que la matière et la forme ont toujours été unies et que le monde, tel qu'il est, a existé de tout temps. Et quoiqu'il répète plusieurs fois que le monde n'existe que par Dieu et qu'il dépend de Dieu comme de sa cause suprême, il reste néanmoins incertain si, en parlant de la sorte, il a considéré le monde comme existant par une production du néant. Il semble plutôt n'être pas non plus arrivé à la connaissance de cette vérité, mais avoir cru précisément que le monde a toujours existé, parce qu'il ne comprenait ni sa production du néant ni l'existence soit d'une matière sans formes, soit de formes sans matière — (**Kleutgen,** *La Phil. Scol.,* v. iv., p. 441).

« Equidem puto non esse valde probabile Aristotelem censuisse mundum creatione ex nihilo esse ortum. Si creationis conceptum habuisset, sine dubio eum clare proposuisset et accurate expolivisset et contra alios philosophos, qui ex nihilo nihil fieri posse passim docebant, fuse defendisset. Nunc autem contra illos non pugnat, sed cum eis docet materiam et mundum et motum esse ab æterno » — (**Hontheim,** *Theodicæa,* p. 710).

haud ejus repugnantiam, manifestat; quemadmodum in productione ex præhabito subjecto, quo major est improportio termini *a quo* relate ad opus præstandum, eo magis admiramur modum efficientiæ et efficaciam et præstantiam artificis. Unde, dato ente infinitæ virtutis in operando, nulla ex hac parte adest repugnantia. *(c) Repugnantia non habetur in termino producto:* terminus enim productus est ens finitum, quod, quum actu existentiam habeat, nullam procul dubio repugnantiam in suis notis involvit.

Pars 2ª *minoris.* Creatio habet extrinsecam possibilitatem, si existit ens, quod facere potest quodcumque habet possibilitatem intrinsecam; *atqui* existentia talis entis invictis argumentis probatur in Theodicæa; *ergo.*

30. II. Modus operandi alicujus causæ proprius respondet proprio ejusdem modo essendi, operatio enim sequitur esse eique proportionatur; *atqui* Deus est in essendo absolute independens ab omni ente sibi extrinseco; *ergo* in operando parem sibi independentiam vindicat — id quod dici non posset, si in rerum productione indigeret subsidio materiæ præjacentis. Præterea, hæc materia esset infecta vel facta: — non *infecta,* quia hæc repugnat (n. 18); non *facta,* quia recurrit eadem quæstio, et tandem amittenda esset res ex nihilo subjecti producta. *Ergo* creatio mundi nullam involvit repugnantiam.

31. Cor. Ergo vis creandi sicut est absolute independens, ita est simpliciter infinita, et ideo nulli creaturæ communicari potest. Et quantum ad hoc nulla datur dissensio inter auctores, si agitur de virtute creandi nullis limitibus coarctata. Quidam autem dubitant, utrum ratio possit demonstrare virtutem creandi aliquod ens *particulare* non posse creaturis communicari. Atvero, causa, quæ habet vim vel unam rem creandi, illimitatam vim creandi possidet, quia actio creativa, quum non exerceatur supra subjectum præexistens, tota quanta est, consistit in actu voluntatis, qui actus simul complecti potest sexcentas res creabiles.[1]

[1] « Si ex una parte supponatur in creatura potentia creativa, et

Porro, creatura non potest ad creationem concurrere ut causa instrumentalis.[1] Nam in tali supposito actio creaturæ aut transiens esset aut immanens: 1°. non *transiens*, quia talis actio supponeret subjectum, in quo reciperetur, quodque disponeret ad actionem principalis recipiendam; in creatione autem subjectum excluditur; 2°. non *immanens*, quia ista actio esset creatæ voluntatis *(a)* aut Deum mediis moralibus (oratione, votis, etc.) moventis, ut Ipse crearet, *(b)* aut suis propriis viribus rem ex nihilo producentis. In primo casu creatura esset causa moralis, in altero causa totalis, in neutro causa *instrumentalis*.

32. Obj. 1. — Ex nihilo nihil fit, juxta effatum commune: *atqui* creatio importat effectionem ex nihilo; *ergo* creatio est repugnans.

Resp. — *Dist. maj.* Ex nihilo, tamquam ex subjecto vel materia præexistenti, nihil fit, *conc.*; ex nihilo, tamquam termino *a quo subdist.*, virtute finita, *conc.*, infinita, *neg. Contradist. min.* et *neg. concl.* Prædictum effatum habet sensum ambiguum; potest enim significare creationem intelligi debere ut quandam mutati-

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ex alia dicatur limitata ad certum ordinem creabilium; hæc limitatio vel peteretur ex ipsa potentia, vel ex ejus objecto, vel ex modo illud attingendi. Atqui non potest peti *ex ipso objecto*; quia in objecto nihil aliud requiritur, nisi possibilitas, et hæc invenitur in omnibus creabilibus: non *ex parte modi attingendi illud*; quia modus est producere *ex nihilo*, et hæc difficultas jam superata est ab eo, qui supponitur posse vel unum creare: non *ex ipsa potentia*; quia cum creatio nullum præsupponat subjectum, potentia creandi in creatura deberet esse ipsa ejus voluntas, cui communicata esset efficacia divina: « dixit, et facta sunt: mandavit, et creata sunt »; voluntas autem potest velle sicut unum, ita omnia creabilia. . . *Dicis*: Limitatio, illa peteretur ex ipso subjecto, in quo esset potentia creandi, creatura enim est finita. *Resp.* — Sed si aliqua potentia inspecta in se ipsa, in suo objecto, in modo illud attingendi, nullam patitur limitationem, nequit dici quod limitetur a subjecto limitato, in quo est; sed potius quod cum sit infinita, nequeat in limitato subjecto reperiri » — (**Mazzella**, *De Deo Creante*, p. 82).

[1] Possibilitatem hujus causalitatis instrumentalis « concedunt magister, aliique theologi nec pauci nec parvi momenti, uti Tannerus, Arriaga, Hurtado, etc. Oppositum tamen docent cum S. Thoma Albertus M., Scotus, Ricardus, Vasquez, Molina, Bannez, Sylvius, Valentia, quibus adhærent recentiores passim, ut Mazzella, Satolli, Palmieri, Hontheim, etc. » — (**Janssens**, *De Deo Creatore*, p. 156).

onem nihili in realitatem, quo sensu verissimum est effatum. Potest etiam significare nullam effectionem dari posse sine subjecto prævio, ex quo effectus educatur; et hoc sensu iterum verum est relate ad causas finitæ activitatis, falsum autem relate ad causam absoluta et infinita virtute fruentem.[1]

Obj. 2. — Infinita distantia habetur inter nihilum et ens; *atqui* distantia infinita pertransiri nequit: *ergo* impossibile est, ut ens ex nihilo producatur.

Resp. — *Dist. maj.* Infinita distantia sensu proprio accepta seu ut medium reale habetur. . . *neg.;* infinita distantia metaphorice sumpta pro infinita disproportione, *conc.* Pariter *dist. min.* Infinita distantia sensu proprio sumpta pertransiri nequit *conc.;* sensu metaphorico, *subdist.,* nisi detur vis infinita, *conc.;* tali vi admissa, *neg.* « Objectio illa procedit ex falsa imaginatione, ac si sit aliquod infinitum medium inter nihilum et ens; quod patet esse falsum. Procedit autem falsa hæc imaginatio ex eo quod creatio significatur ut quædam mutatio inter duos terminos existens » (**S. Th.**, p. 1, q. 45, a. 2, ad 4). At vero inter 'nihilum' alicujus entis et ipsum ens nulla habetur proportio, et proinde infinite distare ab invicem dici possunt, quam distantiam metaphoricam virtus infinita potest pertransire seu potius superare.

Obj. 3. — Intelligi nequit, *quomodo* res ex nihilo producatur; creatio igitur irrationabiliter admittitur.

Resp. — *Dist. antec.* Intrinsecus modus actionis creativæ adæquate intelligi nequit, *conc.;* intrinseca et extrinseca possibilitas educationis rerum ex nihilo. . . *neg.* Pariter *dist. cons.* Si ejus possibilitas intelligi nequit, *trans.;* si intima natura et modus actionis creativæ comprehendi non potest, *neg.;* sed perperam exinde pos-

[1] The axiom of the Epicureans, «From nothing, nothing is made,» which our modern philosophers quote so triumphantly, is of no real weight. As an argument against the theory of creation, its strength rests only on imagination, which substitutes phantasms for intellectual ideas, and represents creation as the act by which imaginary nothing is changed into the universe, just as the earth itself, by the organic process of assimilation, is changed into flowers and fruit. Hence if the phrase «out of nothing» means pre-existing matter, which is transformed into and has become the world, the axiom, «Out of nothing, nothing is made», is true, and it does not require any great acuteness to apprehend it. But the phrase, «God created the world out of nothing», was employed to exclude any idea of pre-existing matter, and it is by a direct perversion of its sense that 'nothing' can be understood as the matrix, origin, and matter of being — (**Hettinger**, *Nat. Religion,* p. 95).

sibilitas creationis negatur, eo magis quod intrinsecus modus actionum ordinis vegetativi et cognoscitivi nos latet.[1]

33. Obj. 4. — Possibilitas creationis importat existentiam entis increati et initio carentis : *atqui* talis entis existentiam mens non potest concipere, quum ad illam concipiendam opus sit fingere tempus infinitum per quod tale ens extitisset ; tempus autem infinitum repugnat : *ergo* repugnat existentia entis increati et proinde etiam creatio. — *(H. Spencer,* First Principles, p. 31).

Resp. — *Conc. maj. dist. min.* Existentiam entis increati mens non potest concipere conceptu proprio et intuitivo, *conc. ;* analogo et discursivo, *neg. Dist. prob. additam.* Ad talem existentiam concipiendam opus est, saltem implicite concipere *durationem* infinitam *conc. ; tempus* infinitum, *neg.* Tempus infinitum est quidem repugnans, existentia vero entis increati non requirit tempus, immo illud excludit, quum existat duratione simplicissima, quæ omni successione caret.[2]

Obj. 5. — Ut theoria creationis sit completa, oportet admittere creationem ipsius spatii ; *atqui* absurdum est spatium aliquando non fuisse, postea vero illud incepisse : nulla enim vi mentis nostræ possumus non-existentiam spatii concipere ; *ergo.* — *(Spencer,* ib.).

Resp. — *Dist. maj.* Oportet admittere creationem spatii possibilis, *neg. ;* realis, *subdist.,* tamquam alicujus realitatis a corporibus distinctæ, *neg.,* cum eis identificatæ, *conc.* Pariter *dist. min.* Hoc absurdum est relate ad spatium possibile, *conc. ;* relate ad

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[1] The *fact* of creation reason can conclude to, but the *act* itself being intrinsically infinite, it cannot fathom. It cannot fathom even its own creative-like power of thought, though it is most certainly conscious of that power. It is through this mysteriousness of the operations of the soul that St. Thomas introduces us to the consideration of God's creative act. 'Since, therefore,' he says, 'by the actuality that is in us, we can, not only produce immanent actions, such as those of understanding and willing, but also exterior actions, by which we produce some things, much more can God, being actuality itself, not only understand and will, but also produce an effect, and thus He can be the cause of their being to others.' Contra Gent., lib. 2, c. 6 — **(Ronayne,** *God Knowable and Known,* p. 107).

[2] The concept formed by men of a Being uncaused and wholly independent is in reality a concept of self-existence. This concept does not explicitly express the infinite duration of that Being and is so far forth inadequate, it is not a *comprehensive* concept ; God alone comprehends His self-existence and infinite duration. This duration is, however, not infinite time, as Mr. Spencer thinks it should be. In God there is no succession ; and where there is no succession, there is no time — **(Boedder,** *Nat. Theology,* p. 158).

spatium reale, *neg.* Qua distinctione ad probationem minoris applicata, *neg. concl.* Objectio innititur in confusione spatii possibilis cum spatio reali. Spatium reale non est aliud quam realis extensio corporum; spatium vero possibile nihil realitatis habet, sed est mera possibilitas extensionis corporum; possibilitas autem nec incipit nec desinit, nec ut incipiens, nec ut desidens concipi potest.[1] Unde ut theoria creationis sit completa, minime requiritur, ut creetur ipsum spatium, sicut non requiritur, ut creetur ipsa aptitudo corporum ad extensionem habendam (n. 68 sqq.).

§ 3. De Possibilitate Temporaneæ Creationis Mundi.

34. THESIS IV. — Potest philosophice probari nullam esse æternæ creationis necessitatem.

Stat. Quæst. — Quidquid dicatur de mente Aristotelis et veterum generatim circa notionem creationis (p. 38), certum est et ab omnibus concessum eos docuisse mundum vel saltem materiam mundi necessario fuisse ab æterno. Inter Christianos æternitatem mundi « Origines propugnavit, illa inductus ratione, quod id omnipotentia et dominatio divina expostulant. Idem sensisse quoque putandam est omnes illos qui Deum esse causam necessariam mundi docuerunt; namque, quoniam Deus est æternus, liquet eum, si esset causa necessaria mundi, mundum ab æterno creare debuisse. Enimvero, utrumque, *scil.*, Deum et esse causam necessariam mundi, et mundum ab æterno creasse, post aliquos antiquos a S. Basilio commemoratos, atque in media ætate Echartum, inter recentes Robinetus sæpe et vehementer tuitus est. . . In eamdem sententiam, ne de aliis multis dicamus, concesserunt Voltaireus, qui mundum, utpote æterni Artificis opus, æternum esse debere contendit, . . . et nuper Cousinus, qui creationem mundi esse necessariam, et proinde æternam voluit, quia Deus, cum sit simul substantia et causa,

[1] A man who allows his imagination to picture empty space as a creatable reality, has no right to hurl stones into the garden of Christian philosophy. If only *actual* or real space can be concreated with the corporeal universe, we have no more reason to speak of the « existence » or « non-existence » of empty or imaginary space than of the « existence » of a *possible* triangle or man — (**Pohle-Preuss, *God, the Author of Nature,* p. 9**).

non potuit esse umquam substantia, quin esset causa» — (**Sanseverino**, *Elem. Phil.*, v. ii., p. 452). Idem docent hodierni rationalistæ.

De falsitate harum sententiarum non est Catholico locus ambigendi, quum Fide constet « Deum *ab initio temporis* utramque de nihilo condidisse naturam, spiritualem et corporalem » *(Conc. Vat.)*. Quod autem Fides docet, ratio confirmat demonstrando nullam esse æternæ creationis necessitatem, immo gravissimas rationes affert ad probandam æternæ creationis impossibilitatem. De qua quæstione, libere inter Catholicos agitata, nonnulla dicentur in *scholio* (n. 36). Hic probatur nullam esse creationis æternæ necessitatem.

35. **Prob. Thesis. Arg.** Si adesset necessitas mundum ab æterno creandi, ratio hujus necessitatis repetenda esset vel ex parte Dei vel ex parte mundi (tertia ratio adduci nequit, quum præter Deum et creaturam nihil detur); *atqui* ex neutra parte habetur ulla necessitas ab æterno creandi; *ergo*.

Prob. minoris pars 1ª. **Ex parte Dei** necessitas creandi ab æterno oriretur aut *(a)* quatenus Deus, vi suæ essentiæ, ad creandum determinaretur, aut *(b)* quatenus liber divinæ voluntatis actus, utpote æternus, exigeret, ut suus terminus *(i.e.,* mundus) sit æternus. *Atqui (a)* Deus ad creandum non determinatur vi suæ essentiæ; aliter non esset summe sibi sufficiens, nec summe a creaturis independens, sed eis aliquo modo indigeret, vel ut fine, vel ut mediis ad finem aliquem necessarium consequendum; *(b)* actus divinæ voluntatis, quo Deus libere voluit existentiam mundi, est quidem æternus, quum sit identicus cum divina essentia; nulla autem existit necessitas, ut habeat terminum seu effectum æternum; nam hic actus infinitus et perfectissimus sic comparatur ad suum effectum, ut sicut possit illum producere vel non producere, ita etiam possit illum producere quandocumque lubeat, quin ullam in se mutationem subeat. Quod quomodo fiat, in hac vita plene intelligi non posse fatendum est.[1].

[1] If we turn to the relation existing between the creative *fiat*

2°. **Ex parte mundi** necessitas æternæ creationis in eo esset, quod mundus vel materia mundi, vi suæ naturæ, existentiam postularet; *atqui* mundus existentiam non postulat, sed essentialiter est indifferens tum ad existendum tum ad non existendum, seu, ex natura sua est ens contingens. Et revera, hæc necessitas existendi aut omnibus mundi partibus aut quibusdam dumtaxat competeret; *atqui (a) non omnibus,* quia experientia docet innumera corpora aliquando non fuisse, quæ postea existentiam acceperunt; *(b) non quibusdam,* quia licet experientia nostra se non porrigat ad omnia corpora singillatim, tamen legitimo inductionis processu tute concludimus de omnibus id, quod de plurimis certo scimus. Nam, quum corpora omnia sint entia ab alio, nulla ratio, potest a parte sui assignari, cur quædam exigant, quædam non exigant, ab æterno creari; et si corpora animata, quæ perfectiora sunt, non fuerunt semper, idem a fortiori valet

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and the nature of creatures, we may be tempted to think that here there is really a reason for the necessity of eternal creation. We might seem justified in arguing thus: The total cause of every creature is the free decree of God, which free decree has existed from eternity. But the total cause of an effect cannot exist without the simultaneous existence of the effect. Every creature, therefore, which really is a creature, in the strict sense of the word — that is to say, every being immediately produced out of nothing — must have existed from eternity. However, it is not at all evident that in every case without distinction the total cause of an effect cannot exist without the simultaneous existence of the effect. It is true that a cause as such bears a necessary relation to an effect. It is also true that a cause from which an effect proceeds, according to the natural law to which the cause is subjected, cannot be in the state sufficient for the production of the effect without producing it at once. But, given an infinite will able by the mere expression of its purpose to call things out of nothing into existence, it is not at all evident that it cannot remain unchangeable, and yet freely determine when the effects will begin, of which its own infinite power is the only efficient cause. Certainly no one can discover an intrinsic contradiction in this proposition: *Although the free decree to create, which is the only efficient cause of the existence of creatures, has existed from all eternity, nevertheless the creatures decreed from eternity have had a beginning, because a beginning has been fixed from eternity by this free decree* — (**Boedder**, *Nat. Theology,* p. 140).

de corporibus inanimatis, et de primitivis corporum elementis.[1]

[1] What does experience teach about the beginning of things? It teaches as a fact proved with absolute certainty that some classes of being have had a beginning. The human race undoubtedly had a beginning. With the quaternary formation all vestiges of man completely disappear, and those in the upper tertiary are, to say the least, doubtful. Accidental causes cannot have obliterated all further traces of man, for the strata teem with remains of the forms of life. On this point science speaks with no uncertain sound. Here, then, is one class of beings on this earth that had a beginning. . . Again, what is the teaching of science about marsupials, birds, reptiles, and animals generally? It traces the animal kingdom step by step from its highest to its lowest forms till at last it reaches the azoic period, in which no animal remains are found. Thus the animal kingdom also had a beginning. Plants, too, fetch the like shrill echoes from the hollow earth. Their different classes and species come forth in gradual order and succession. Thus plants also began to exist at a definite period. Time was when our planet was wholly destitute of organisms. Who dare challenge this clear proof from experience? Its bearing on the question of the beginning of things generally is unmistakable. Philosophers sometimes demonstrate how the world cannot possibly be eternal because its eternity would necessitate an infinite number of human souls, of organic beings, and so forth. Such arguments are good in their kind, but experience is more convincing. Palæontology, again furnishes positive proof that things are limited both as to number and duration. But geology goes a step further. In conjunction with palæontology it shows that this planet of ours has undergone a process of development in being gradually evolved from a chaotic mass into a dwelling-place of living organisms. Aided by the spectrum analysis, physical astronomy has attached the chain of proof to the planets, in which similar modifications are perceptible. All the heavenly bodies are composed of the same elements, and exhibit similar phenomena. Our solar system, all solar systems, in a word, the whole universe originated in a mass of gaseous or nebulous matter. This is not the right place to discuss the theory of Kant and Laplace as to the world's formation. Here suffice it to note that all the most complete modern theories start with a primitive element. . . Now we are straightway met by the question: Whence came the primitive matter? As everybody knows modern science answers: *ignoramus et ignorabimus*. We don't know, and we shall never know. Häckel, Nägeli, and some others have, it is true, started an opposition: We know, and we shall know». This, however, is a vague promise in the future, not only unwarranted by experience, but contradicted by it. By muzzling our knowledge, and allowing it to roam merely over the small territory owned by natural science, we shall only evade the question without answering it. About the first beginning of things science is

36. Schol. — Quærebant scholastici, an Deus, si voluisset, mundum ab æterno creare potuisset, ita ut pro certitudine temporaneæ creationis, non ad rationem, sed solummodo ad Fidem, oportere nos appellare. Dato quod mundus ab æterno creari potuisset, ejus duratio initio careret, ideoque esset Deo coæternus. Circa quam quæstionem tres sunt opiniones inter se discrepantes.

Prima est eorum, qui affirmant hunc mundum mutabilem potuisse ab æterno creari, vel saltem ejusdem impossibilitatem non posse demonstari. Ita *Cajetanus* et fere omnes Ordinis Præd. auctores atque, inter nuperos, *Liberatore, Sanseverino, Schiffini* (Theol. Nat.), *Hugon, Van de Woestyne,* quos omnes præit, ut videtur, *S. Thomas*. « Mundum *incepisse,* inquit, est *credibile,* non autem *demonstrabile* vel *scibile* » (1 q. 46, a. 2). Et: « Mundum incepisse est de numero eorum, quæ cadunt sub fide, non sub demonstratione » *(Quodlibetum* 12um, q. 6, a. 7).

Altera opinio est eorum, qui autumant creationem ab æterno esse repugnantem quoad entia successiva, cen-

silent. As to how and where the primitive matter originated science knows nothing. Before the first beginning and last end of things a veil is spread, dark and impenetrable, through which the human mind cannot peer. But science presses irresistibly onward and overleaps its bounds. And since it admits that a number of things had a beginning, it must concede that the simple primitive matter must also have had a beginning in time. The eternity of primitive matter contradicts this fact, and does but substitute one puzzle for another. It is clear that primitive matter cannot have originated with matter, or it would *ipso facto* cease to be primitive. But it is, indisputably, something actual. It does not contain a sufficient reason of existence in itself; in itself it is wholly indifferent to existence or non-existence. Hence, unless science is to stumble over an unsolved problem lying across its path in the first stage of its journey, it must set itself free from the bondage of an infinite chain of causation (which is already broken, as we have said, by some facts of experience), and seek the first link of the chain in an eternal and higher cause. Every effect must have a cause, and, therefore, we cannot here go on *ad infinitum*. Through a labyrinth of causes and effects experience has conducted us to the inner shrine of matter. But we cannot stop outside; we must penetrate into the shrine itself. There is no shirking the question whether or no primitive matter had a beginning — **(Schanz-Glancy,** *A Christian Apology,* **v. i., pp. 119-124).**

sent autem non posse demonstrari impossibilitatem creationis æternæ quoad entia permanentia. Cui sententiæ adhærent *Suarez* (Meta. Disp. 20), *Goudin,* quos sequuntur *Zigliara, Boedder* et *Urràburu* (Cosm., p. 277). Sunt qui Doctorem angelicum idem sentire probare conentur. « Multi auctores, etiam ex Thomistis, docent angelicum non admittere possibilitatem æternæ creationis quoad res successivas, at falluntur » **(Hugon,** *ib.).*

Tertia sententia affirmat existentiam ab æterno cujusvis creaturæ esse intrinsece repugnantem. Quam sententiam tenuerunt haud ignobiles scholastici antiqui (cf. notam) et moderni (v.g. *Tongiorgi, Pesch, Hontheim, Lahousse, Van der Aa, Brosnan, Janssens).* Eamdem docuisse SS. Patres communiter admittitur etiam ab adversariis.[1]

[1] « SS. Patres ceterique scriptores ecclesiastici hanc controversiam data opera non tractant; verum ea quæ de origine mundi. . . et de generatione Verbi contra Arianos disputarunt, attente expendentibus certum nobis videtur illos, saltem maximam partem, in hac sententia versatos fuisse, quod mundus ab æterno creari non potuit » — **(Sanseverino,** *loc. cit.,* p. 487).

« Communis est Patrum doctrina non solum de facto nullam creaturam ab æterno esse, sed ne posse quidem, ita ut contra rationem peccent, qui mundum æternum esse statuant. Idem docent Alex. Halensis, B. Alb. Magnus, S. Bonaventura. Etiam post S. Thomam plurimi inventi sunt gravissimi nominis auctores, qui, quum Aquinatem magistrum in omnibus religiossime sequi studerent, in hac tamen quæstione eum deserebant, ut Lessius, Toletus, Sylv. Maurus. Immo ipse S. Thomas versus finem vitæ a sententia, quam omnes hi auctores defendunt, non tantum afuit. Concedere enim videtur hominem non potuisse creari ab æterno. Hoc autem ostio aperto parvus tantum et facillimus gradus est ad id, ut dicatur nullam creaturam posse esse ab æterno. . . Itaque nos ut certum tenemus simpliciter repugnare ullam creaturam esse ab æterno, idque ex principiis ab ipso S. Thoma celebratis sequi existimamus, ita ut in hac re a littera forsitan Doctoris Angelici aliquantulum declinemus, a spiritu autem ne minimum quidem » — **(Hontheim,** *Theodicæa,* p. 711).

« Ultima scripta Angelici cum prioribus conferenti apparet S. Thomam in fine possibilitatem mundi æterni magis contraxisse » — **(Janssens,** *op. cit.,* p. 200).

Petavius (de Deo, n. 3, c. 6, l. 1) declares it to be the universal patristic doctrine, used constantly in controversy with the Arians, that the notion of an eternal creature is cognizable by reason as intrinsically repugnant. . . With sincere deference, then, to those eminent Catholics who on this matter follow S. Thomas, we can-

37. Præcipuum et generale argumentum pro possibilitate creationis ab æterno est : — Ens ab æterno creatum non repugnat ex parte Dei, quum ab æterno habeat virtutem creandi ; nec ex parte creaturæ, quum hæc a determinata duratione abstrahat ; *ergo*. Quantum valet hoc argumentum optime patebit per aliud simile, *scil.* : Corpus implens omne spatium possibile non repugnat ex parte Dei, cujus vis creandi non limitatur ; nec ex parte corporis, quum hoc a determinata magnitudine præscindat. Quis autem hoc alterum argumentum admittet? et tamen, priori admisso, et hoc admittere debet, quum perfecta sit paritas inter infinitam magnitudinem et infinitam durationem. Sed juverit pauca directe adnotare contra possibilitatem creationis æternæ. Agevero, nullum datur vel mente nostra assignari potest instans, ante quod Deus creare non potuerit, seu, nulla duratio quamtumvis longa est possibilis, qua majorem atque majorem durationem Deus mundo tribuere non potuerit. Hoc ab omnibus conceditur, quum Deus virtute creandi numquam caruerit, et creatura sit prorsus indifferens quoad instans, in quo existere incipiat. At exinde non sequitur possibilitas entis ab æterno creati, sed tantum possibilitas entis, cujus duratio *a parte ante* potuerit esse major atque major indefinite. Ens namque ab æterno creatum, esset ens productum ante quodvis instans designabile, seu, ens, quod existentiam *accepit* sed existere numquam *incepit, initium* numquam habuit ; non aliud enim præ se fert ens ab æterno creatum, ut docet *S. Thomas* (loc. cit.).

Jamvero, **ens creatum sive successivum sit sive permanens, quod initium numquam habuit, repugnat.**

38. Prob. 1° *quoad ens successivum*. Si quodvis ens suc-

not do so ourselves — **(W. G. Ward**, *Philosophy of Theism* v. i., p. 39).

The authority of the Fathers seems rather to favour the intrinsic impossibility of an eternal creation — **(Pohle-Preuss**, *God, the Author of Nature,* p. 54).

cessionibus obnoxium posset ab æterno creari, admittenda esset series mutationum, quæ absque initio essent; *atqui* hoc repugnat. Et quidem, quum in hac serie dari non posset terminus *primus* præcedens reliquos seriei terminos, necesse est admittere omnes et singulos serici terminos esse subsequentes, *atqui* series, cujus termini sunt omnes subsequentes, est repugnans; nam ut terminus sit subsequens, ipsum alter terminus præcedat oportet. Ergo termini seriei nequeunt esse omnes subsequentes, et proinde in ente successivo admittendus est *primus* terminus unde successio incipiat; quod autem incipit non est ab æterno; *ergo*.

Idem paulo aliter. In omni successione necessario habetur *prius* et *posterius; ergo* necessario habetur *primum,* secus daretur *relatum* sine *correlato*.

Rursus. Si ens successivum posset ab æterno creari, ejus mutationes vel haberent terminum *a quo,* vel non haberent; *atqui,* dempto termino *a quo,* demitur mutatio, et per consequens, successio; posito termino *a quo,* ponitur initium, unde incipit successio; successio autem, si incipit, non est æterna; *ergo*.

2°. *Quoad ens permanens*. Nullum concipi potest ens creatum, quantumvis permanens, quod totam suam permanentiam in existendo simul habeat. Etenim quamvis eadem sit realitas physica, quæ immutata permaneat, tamen ita permanet, ut ejus existentia instantibus successivis respondeat, et post quodvis instans desinere possit, nisi conservetur, — id quod dici nequit, si ejus permanentia in esse omnem successionem excluderet. Et revera, dato tali ente, in eo designari potest instans, in quo simpliciter creatur, et in quo ideo non potest annihilari, et instans, in quo conservatur et proinde potest annihilari. Atvero, quum annihilari possit quocumque instanti, in quo conservatur, designari potest, et a Deo certo cognoscitur, series instantium post instans creationis, in quibus annihilari potest. Ens igitur creatum ex natura sua et necessario est in existendo successivum. Præterea, si tale ens ab æterno creatum

natura spirituali gauderet, operationes spirituales eliceret, ita ut modo intelligeret, modo amaret, etc.; quæ omnia mutationem et successionem involvunt. Jam, ens successivum ab æterno creari nequit, ut supra ostensum est, et a patronis secundæ opinionis conceditur; hic autem ostenditur omne ens creatum esse necessario successivum; *ergo* intrinsece repugnat mundum, vel ens quodlibet, potuisse ab æterno creari.[1]

Obs. — Hunc mundum incepisse non solum ex principiis metaphysicis sed etiam physicis sequitur, præsertim ex lege entropiæ, juxta quam aliquando erit æquilibrium omnium virium in toto rerum materialium universo. Jamvero, si mundus ab æterno esset creatus, hoc æquilibrium jamdiu advenisset, quantumvis temporis ad illud æquilibrium efficiendum requireretur, quum duratio successiva ab æterno perdurans, præ omni comparatione major esset duratione quacumque initium habente.[2]

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[1] Ad rem nostram sunt verba *cl. Boedder* etsi secundam sententiam defendit: « We grant that succession from eternity is impossible. We do not deny that succession belongs to the nature of every actually existing creature; but we say that it is not evident that it must belong to the nature of every *possible* creature. . . We have, therefore, no clear evidence that in the substance of a spiritual creature there is succession. But it may be asked, Is there not necessarily succession in its operations? Or is any created spirit possible which can operate without change in itself? If that is an impossibility, every created spirit must necessarily have a beginning, for a spirit cannot be wholly without operation. This reason goes a long way to show that the creation of a spirit from eternity, and *a fortiori* the creation of matter from eternity, is absolutely impossible, for an existence from eternity can hardly be other than a changeless existence; and we cannot conceive either matter or spirit to have existed from eternity without change » — *(Nat. Theology,* p. 144). Addit tamen: « We are not inclined to think that such a created existence is possible; but neither have we a certain reason for saying that it is intrinsically repugnant ».

[2] Science proves that all bodies in a limited system must eventually be at a uniform temperature. It also shows that when this state is reached there can be no change of temperature produced without the intervention of some outside influence. At the present time there are differences of temperature in our universe. This difference of temperature is less than it was, and in a definite period, calculable for one who knows the dimensions of the universe, this world, and all things in and around it, will have come to such a state that life will be impossible. Now if the maximum difference of temperature which we are leaving behind us had begun earlier than it did, by a period equal to that which still remains to our

ART. II.

DE MUNDI FORMATIONE.

39. Ex jam dictis sequitur mundum a Deo creatum esse, et quidem in tempore. Hic vero quæritur, quinam fuerit status mundi noviter producti, et quonam modo et ordine tota rerum materialium universitas efformata et perfecta fuerit. Potuit enim Deus unico momento omnia efficere et perficere; potuit etiam materiam primitivam creare *(i. e.*, elementa chimice simplicia), eamque ipse solus disponere atque conformare; potuit denique materiæ a se creatæ et viribus aptis instructæ ea omnia efficienda committere, quæ naturalibus viribus fieri poterant, ut deinde terram variis ornaret plantis et diversas animalium species produceret ac tandem hominem ad imaginem et similitudinem suam crearet. Triplex iste modus est manifeste possibilis, nec ulla ex parte repugnantiam involvit. Ultimus tamem ceteris præferendus est tum ob ejus majorem congruentiam cum divinis perfectionibus, tum ob rationes quæ in ejus favorem suppetunt.[1] Claritatis causa, ea, quæ hac de re dicturi

universe, it is clear that the final stage would already have been reached. Therefore the universe cannot have been in existence for ever, for then *a fortiori* there would be no world now — (**Gill.** *The New Ireland Review* Nov., 1908).

[1] To the question, In what condition was the world-matter created, whether homogeneous or differentiated into various specific substances? neither revelation nor science gives answer. Until lately the practically universal opinion of Catholic philosophers favoured an original essential differentiation of the elements. Since, however, the tendency of physico-chemical experimentation and inference now points with some probability to a radical homogeneity of matter, and since philosophy is bound to reduce the world to its fewest and simplest principles, the opinion seems justified that the original matter was created actually undifferentiated, but with inherent potency towards elemental and, subsequently, compound diversification through the action, reaction, and grouping of the ultimate particles. When — probably through some such processes as are suggested by the well-known nebular hypothesis (Kant, Laplace) and by the inductions of geology — the material universe was disposed for the simplest forms of life, then God said: « Let the earth bring forth the green herb. . . » — (**Siegfried**, *Cath. Encycl.*, v. iv., p. 473).

sumus in duas partes oportet dividere, quarum prima erit de mundo generatim, altera vero de terra nostra.

§ 1. De Mundi Formatione Generatim.[1]

40. THESIS V. — Valde probabile est efformationem totius mundi adscribendam esse materiæ informi aptis viribus instructæ, Deo suum ordinarium dumtaxat concursum præbente.

Prob. Thesis. Arg. I. – Hæc sententia *(a) commendat divinam sapientiam,* quæ non permittit, ut quidquam in rebus inutile sit, sed ad cosmicum ordinem efficiendum omnibus elementorum viribus usa est ; quæ enim per media ordinaria fieri possunt, Deus non efficit modo extraordinario ; elementa autem, statim ac creata sunt, habuerunt proprietates et vires sibi connaturales. «Oportet quod omnium ordines per sapientiam suam disponat, etiam minimorum ; exsequatur vero minima sive infima per alias inferiores virtutes, per quas Ipse operatur, sicut virtus universalis et altior per inferiorem et particularem virtutem. Conveniens est igitur, quod sint inferiores agentes divinæ providentiæ executores » (**S. Th.**, *C. Gent.,* lib. 3, c. 77).

— *(b) Manifestat divinam potentiam,* quæ ita creaturarum naturas disposuit, ut ipsæ sua propria activitate ordinem efficere possint. « Quanto virtus alicujus agentis est fortior, tanto in magis remota suam operationem extendit. . . Hoc autem non contingit in agente, quod non agit per medium, quia quodlibet, in quod agit, est sibi proximum. Quum igitur virtus divinæ providentiæ sit maxima, per aliqua media ad ultima suam operationem perducere debet » (**S. Th.**, *ib.*).

— *(c) Exaltat divinam majestatem,* quia ad dignitatem regentis pertinet, ut multos diversosque sui regiminis habeat ministros ; congruum igitur erat, ut Deus per

[1] Formation is an operation which, from already created matter, moulds different natures, fittingly compounds them, collects them into one synthesis, furnishes them with their own proper forces, and ordains them towards an end — (**Humphrey**, *His Divine Majesty,* p. 262).

diversas vires tamquam ministros formationem mundi corporei exsequeretur.

— *(d) Adumbrat divinam æternitatem,* quia sicut Deus vestigium suæ immensitatis nobis exhibet in mira cœlorum extensione, ita conveniens fuit, ut vestigium suæ æternitatis nobis exhiberet in longissima annorum duratione requisita ad lentam totius mundi efformationem ex primitivis elementis per vires naturales.

41. Arg. II. - Est consueta divinæ sapientiæ ratio agendi, ut ea omnia causis creatis efficienda relinquat, ad quæ, pro sua natura, idoneæ inveniuntur; *atqui* elementa primitiva, sicut habuerunt proprias naturas, ita etiam habuerunt proprias vires et proprietates, quæ naturas elementorum consequuntur; *ergo* omnino verisimile videtur Deum in ipsa mundi constitutione ministerium virium naturalium adhibuisse. Nec licet ad hanc constitutionem explicandam recursum habere ad miracula, tum quia miracula non sunt assumenda sed probanda, tum quia initium ordinis naturæ non est explicandum per miracula, quæ suspensionem ejusdem ordinis involvunt. « In prima institutione naturæ non quæritur miraculum, sed quid natura rerum habeat » (**S. Th.**, 1, q, 67, a. 4).

§ 2. De Terræ Nostræ Formatione.

42. THESIS VI. — Terra nostra ad statum, quem habuit, quando homo apparuit, ope virium naturalium per longissima temporis spatia operantium pervenit.

Stat. Quæst. — Id, quod ex dictis verum esse videtur de totius mundi formatione, confirmatur et quodammodo certum redditur per ea, quæ scientiæ naturales docent de præsenti statu terræ et cœlestium corporum melius nobis notorum. Ex modo enim, quo mundus existit, licite concluditur ad modum, quo fuit formatus.

Et revera, ex factis, quæ imprimis geologia et palæontologia de terræ stratis eorumque multitudine, ordine, deque fossilibus in his stratis contentis patefaciunt, hisce temporibus nova disciplina (quam *geogoniam* ap-

pellant) exorta est, quæ modum, quo terra nostra ab imperfectissimis initiis ad præsentem statum perfectum pervenerit, explicat. Pariter plures astronomi, præeunte *Laplace,* ex astrorum motibus eorumque directione theoriam cosmogoniæ construxerunt ad explicandum quomodo ex materia nebulosa totum systema solare gradatim efformatum sit.[1]

[1] We have already had occasion in an earlier chapter to allude to the fact that all the planets perform their revolutions around the sun in the same direction. It is also to be observed that the rotation of the planets on their axes, as well as the movements of the satellites around their primaries, all follow the same law, with two slight exceptions in the case of the Uranian and Neptunian systems. A coincidence so remarkable naturally suggests the necessity for some physical explanation. Such an explanation is offered by the nebular theory. Suppose that countless ages ago a mighty nebula was slowly rotating and slowly contracting. In the process of contraction, portions of the condensed matter of the nebula would be left behind. These portions would still revolve around the central mass, and each portion would rotate on its axis in the same direction. As the process of contraction proceeded, it would follow from dynamical principles that the velocity of rotation would increase; and thus at length these portions would consolidate into planets, while the central mass would gradually contract to form the sun. By a similar process on a smaller scale the systems of satellites were evolved from the contracting primary. These satellites would also revolve in the same direction, and thus the characteristic features of the solar system could be accounted for.

The nebular origin of the solar system receives considerable countenance from the study of the sidereal heavens. . . If our sun has passed through such changes as the nebular theory describes, may we not anticipate that similar phenomena should be met with in other stars? Let us see how far the telescope responds to these anticipations.

The field of view of a large telescope usually discloses a number of stars scattered over a black background of sky; but the blackness of the background is not uniform: the eye of the skilled observer will detect in some parts of the heavens a faint luminosity. . . The conclusion is irresistible that the object is a stupendous mass of faintly luminous gas or vapour. This is the simplest type of nebula; it is characterized by extreme faintness, and seems composed of matter of the utmost tenuity. On the other hand, we are occasionally presented with the beautiful and striking phenomenon of a definite and brilliant star surrounded by a luminous atmosphere. Between these two extréme types of a faint diffused mass on the one hand, and a bright star with a nebula

Ast, quum christianus in quæstionibus de cosmogonia et geogonia semper præ oculis habere debeat narrationem biblicam, juvabit hic apponere, quæ hac de re Fide credenda esse discimus ex Genesi (cc. 1 et 2), ubi Moyses opificium divinum ex Dei ipsius revelatione cognitum exponit. Itaque, sacer scriptor nos docet *(a)* mundum a Deo fuisse creatum ; quisnam vero fuerit status mundi noviter conditi (an solidus, igneus, aqueus, etc.) nos non docet ; *(b)* totum opus sex diebus fuisse perfectum ; quid autem nomine « sex dierum » intelligendum sit (an spatium 24 horarum sexies repetitum, periodi satis longæ, visiones operum Dei, an aliquid aliud) sacer auctor haud determinat.

Unde liquet nullum posse esse dissidium inter systemata cosmogonica et narrationem biblicam, sive illa systemata statuant mundum brevissimo tempore sive ingentibus periodis fuisse conditum atque ornatum, dummodo factum creationis non negent.

Quum circa internam naturam orbium cœlestium vix aliquid, si elementa excipias, nisi conjectando cognoscere valeamus, e contra terræ nostræ historiam subsidio inquisitionis geologicæ quasi perlegere possimus, hanc præ ceteris universi partibus specialiter considerare oportet.

43. Prob. Thesis. Pars 1ª. *(ad statum . . . pervenit ope virium naturalium).* **Arg.** – Effectus, qui nullum præ se ferunt indicium specialis interventus ex parte Dei, et

surrounding it on the other, Herschel thought that a graduated series of various other nebulæ could be arranged.

The nebulæ seemed to Herschel to be vast masses of phosphorescent vapour. This vapour gradually cools down, and ultimately condenses into a star, or a cluster of stars. When the varied forms of nebulæ were classified, it almost seemed as if the different links in the process could be actually witnessed. In the vast faint nebulæ the process of condensation had just begun ; in the smaller and brighter nebulæ the condensation had advanced farther ; while in others, the star, or stars arising from the condensation had already become visible — (**Ball**, *The Story of the Heavens*, p. 527). Cf. **Zahm**, *Bible, Science, and Faith*, caput tertium, cui titulus : ***S. Gregory of Nyssa and the Nebular Hypothesis.***

plurima præbent signa se a causis naturalibus prodiisse, causis naturalibus adscribendi sunt; nam talis interventus divinæ potentiæ, prætermissis (vel ad supernaturalem modum agendi elevatis) causis naturalibus quæ ordinario concursu divino adjutæ sufficiunt ad aliquem effectum, est miraculosus et proinde gratis et absque ratione congruente non est supponendus. *Atqui* varia terræ strata, eorum dispositio, divisio, hinc illinc irregularitas, necnon fossilia in his stratis inventa, nullum præbent indicium se speciali Dei operatione fuisse elaborata; sed potius indicant se fuisse evoluta juxta leges, quæ nunc obtinent in mundo corporeo. Et sane, *(a) ipsa strata* quoad totam massam tabulatim dispositam talia sunt, qualia geologi etiam nunc in diversis locis gradatim efformari testantur.[1]

[1] It is argued that the present operations of nature afford the best key for the interpretation of her works in bygone times. We observe various beds of rock now in course of formation on the surface of the earth; and within the crust of the earth we discover corresponding strata of the selfsame rocks already complete, and laid by, as it were, in nature's storehouse. Side by side, therefore, we may study and compare the finished work and the work that is yet in progress; and if, on a close examination, they are found to agree in all essential characters, we have doubtless a strong presumption, that the same causes which are now producing the one, must in former times have produced the other—(**Molloy**, *Geology and Revelation*, p. 131).

Everyone who has been in Italy is familiar with the limestone rock called Travertine. . . In Rome this stone is associated in our minds as well with the enduring monuments of antiquity, as with the imposing splendour of Christian art. The Coliseum, the most stupendous of ruins, and St. Peter's, the most sublime of temples, are built of Travertine. . . And the quarries from which it was taken in ancient times may still be seen at Ponte Lucano, near Tivoli. Now it is an interesting fact, that close to this very spot, at the Solfatara lake on the one side, and Tivoli itself on the other, the formation of Travertine is going on in our own time, by the precipitation of lime from a state of solution.

. . . Another curious and instructive example of the formation of rock, by chemical precipitation, is afforded by the celebrated mineral waters of Karlsbad, in Bohemia. The springs, which come bubbling up from the depths of the earth at a high temperature, hold in solution a considerable quantity of mineral ingredients. When the water has been, for some time, exposed to the air, these mineral ingredients cease to be held in solution, and fall to the

—*(b)* Saxa, quæ eruptiva dicuntur, et quæ per transversa strata emergunt et montes constituunt, similia sunt eis, quæ in montibus vulcanicis e terræ visceribus emittuntur; est igitur rationi maxime consentaneum affirmare hæc saxa eodem modo efformata fuisse, quo nunc saxa vulcanica efformantur; et perdifficile est creditu Deum saxa illa, ac si prorupuissent et essent «lava» Ipsum condidisse.[1]

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ground in a solid form. But what is particularly interesting in connection with our present subject, is that they do not fall to the ground, as might be expected. in a promiscuous mass. but show a decided tendency to gather round any minute solid body that comes in their way. . . In consequence of this tendency, a number of small, and somewhat globular, bodies are formed, which continue to increase in size by the constant accession of fresh matter, in successive layers, from without, until they come into contact with one another, and are cemented together into a compact mass. Anyone who fully realizes this process to his mind. . . will readily admit that we have here an agency at work quite capable of producing, in the course of ages, a considerable stratum of rock with a peculiar and well-defined structure.

Now such a stratum of rock is that which underlies the town of Karlsbad itself. Its chemical constituents correspond. very nearly, with the mineral ingredients of the water that now flows over its surface. . . Here, therefore, once again, we have an opportunity to compare, in close juxtaposition, the work that has been lying by in the storehouse of nature, with the work still in progress under her guiding hand. They are are the same in all their parts; and the parts are fitted together with the same ingenious contrivance. It seems, then, not unreasonable to suppose that the one was constructed after somewhat the same fashion as the other, and by the operation of the same laws — (*Idem,* ib., pp. 124-128).

[1] Whilst the earth was cooling, cracks and fissures would be formed in the crust, into which the waters of the ocean would rush, and coming into contact with the molten interior, would be instantly turned into steam, the expansive force of which we all know so well. These operations of nature are still going on, and enable us to estimate the intensity of those early convulsions. Our earthquakes and volcanic eruptions, the upheavals and subsidences of districts, and other similar phenomena, may all be traced to similar causes — (**Kinns**, *Moses and Geology*, p. 94).

The carboniferous period was closed by a most important series of earth movements, which not only affected the whole of England, but also a very large adjoining area. All of this was thrown into a series of anticlinal and synclinal folds, and towards the south a mountainous mass was formed which. . . was not less than 300 miles wide across the strike of the folds. To its altitude

— *(c) Fossilia organica,* sive petrifacta sive mediis naturalibus conservata, in fere omnibus stratis reperiuntur. Jam, quum ad hæc explicanda haud recurrendum sit ad Deum has exuvias innumerabiles, prout nunc existunt, creantem atque ordinate per strata et ubique per loca disponentem (id enim ad nos decipiendos tenderet),[1] dicendum est ea esse reliquias organismorum, qui olim vixerunt, quando strata gradatim efformabantur, et proinde non est dubitandum, quin ipsa strata viribus naturæ confecta fuerint.[2]

we have no clue, but its breadth must have exceeded that of the Alps, and it probably extended westwards beyong the south western angle of Ireland, while traces of it can be followed eastwards to beyond the Rhine. . . Yet the sea now flows where some of its highest summits may have risen ; its only record is preserved in the low plateaux and comparatively humble hills of Cornwall and Devon, of the Channel Islands and of Brittany. . . These disturbances cannot but have affected most materially the physical geography of Britain. They probably were connected with the numerous outbreaks of basaltic and other volcanic rock in many parts of England, Scotland, and Ireland, and with the protrusion of the great granitic masses in Devon, Cornwall, and Brittany — (**Bonney**, *The Story of our Planet,* p. 409).

[1] To assume that the Creator leads truth-seeking man into invincible error, is to stamp Him a cruel deceiver, who makes it His business to lay annual rings around carbonized trees found standing erect in coal-mines, and to fashion in perfect detail large and small trilobites in siluric deposits — some of them containing well-developed embryos — all mere *lusus naturæ!* St. Augustine and St. Thomas vigorously protested against this curious way of « reconciling » faith and science — (**Pohle-Preuss**, *op cit.,* p. 109).

[2] We are told by some writers that when we seek to explain the existence of fossil remains by the action of natural laws, we seem to forget the Omnipotence of God. They urge upon us with much solemnity, that He could have made bones, and shells, and skeletons, and petrified wood, though there had been no living animals to which these bones belonged, and no living tree that had been changed into stone. And if He made them, might He not disperse them up and down through His creation, on the lofty mountains, in the hidden valleys, in the profound depths of the sea? and buried them in the limestone rocks and in the soft clay? and arranged them in groups, or scattered them in wild confusion, as He best pleased ?

To this line of argument we must be content to reply, that we have no wish to limit the power of God. But we have learned from our daily experience that, in the physical world, He is pleased

44. Pars 2ª. *(efformatio nonnisi longissimo tempore peracta est).* Rem ita se habuisse colligi potest *(a)* ex vastissima profunditate stratorum;[1] *(b)* ex multitudine exuviarum plantarum et animalium, quæ in his stratis sepeliuntur. Ipsæ *species* ad plura millia attingunt, et tali ordine disponuntur, ut in stratis posterioribus vix unquam appareant species, quæ in prioribus floruerunt (cf. *Molloy*, p. 241).[2]

to employ the agency of secondary causes; and when we know that for many ages a certain effect has been uniformely produced by a certain cause, and not otherwise, then if we again see the effect, we infer the cause. . . Now this is just the principle we are contending for. According to all our experience of the works of God, in the physical order, the living body comes first and the skeleton afterwards; the living tree comes first, and afterwards the prostrate trunk, and the splintered branches. Therefore, when we meet with a skeleton, we conclude that it was once a living body; and when we find the petrified stems, and branches, and leaves of trees, we have no doubt that they are the remains of ancient vegetation — (**Molloy**, *op. cit.*, p. 232).

[1] Various estimates have been made of the thickness of the rocks. One of the most recent is that by Dr. S. Haughton, and Professor E. Hull: —

	Maximum of thickness.
Neozoic Rock	41,050 feet.
Palæozoic »	75,400 »
Azoic »	60,750 »
Total thickness . .	177,200 »

This thickness, more than 33 miles, is not found in any one place; it is obtained by adding together the greatest known thickness of rock in various districts — (**Kinns**, *op. cit.*, p. 94).

[2] Hic juvat apponere series stratorum, quas geologi enumerant, quasque dividunt in quattuor periodos seu ætates mundi terreni scil., *azoicam, palæozoicam, mesozoicam, cœnozoicam*, quibus addi potest periodus *quaternaria* seu recens, in qua terra evasit conveniens humani generis habitatio. «Putting asside minor divisions into groups and stages, we may restrict ourselves to an enumeration of the systems and series, which are at present in general use among geologists in Great Britain, and in many other parts of the world as far as local circumstances permit. For convenience of inspection they are printed in a tabular form, arranged in a descending order, as they might occur in the earth's crust. The most recent — the beds by which the list is begun — are hardly of sufficient magnitude to deserve the name of a series, possibly

45. Quanta sit harum specierum multitudo quibusdam exemplis patebit (cf. *Pesch,* op. cit., v. ii., p. 254):

In formatione *silurica* enumerantur 10,000 species animalium, quæ typum crustaceorum præ se ferunt. Ibidem exstant prima piscium vestigia. In formatione *devonica* animalia ad 5,000 species rediguntur, pisces tamen usque ad 300 fere species excrescunt. Conspicuæ sunt plantæ aquaticæ, et prima insectorum indicia se monstrant. In formatione *carbonica* animalia diminuuntur, sed plantæ mirifice crescunt et efformant immania strata carbonis. Apparent araneæ, locustæ, nonnulla reptilia. In formatione *permica* vix 300 species animalium, quæ ante fuerunt, restant. In formatione *triassica* species animalium usque ad 1,300 numerantur. Primæ etiam apparent aves primaque mammalia. Formatio *jurassica* continet fere 5,000 species animalium. In formationibus *periodi cænozoicæ* 1,700 species animalium enumerantur. Denique formationes *quaternariæ periodi* multa præbent indicia, « quæ probant eo tempore plurimos fuisse ingentium

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not even the name of a system. They form the concluding chapter in the earth's history, comparatively brief, but full of interest, in which geology joins hands with archæology, and beyond which the history of man does not extend. . . This then is the list: —

Series.	*Systems*
Quaternary or Post Tertiary . .	Recent and Prehistoric. Pleistocene.
Tertiary or Cainozoic . .	Pliocene. Miocene. Oligocene. Eocene.
Secondary or Mesozoic . .	Cretaceous. Neocomian. Jurassic. Triassic.
Primary or Palæozoic . .	Permian. Carboniferous. Devonian. Silurian. Ordovician. Cambrian.
Archæan or Eozoic (azoic) . .	Systems not yet distinguished » — (**Bonney**, *op. cit.*, p. 360).

pachydermatum greges per ipsam Europam circumvagantes, inter quos elephantes primigenios (mammoth), rhinocerotes, hippopotamos et catervas animalium rapacium» *(Pesch)*. Jamvero, tempus, requisitum, ut species, aliæ post alias, sic orirentur et ad tantam individuorum multitudinem crescerent, atque ad eam molem corpoream, quam eorum exuviæ exhibent, pervenirent, longissimam fuisse sæculorum seriem manifestum est.[1]

ART. III.

DE CAUSA FINALI TOTIUS CREATIONIS.

46. Quoties ens intellectuale opus quodpiam molitur, ab aliquo bono ad operandum movetur. Illud autem bonum, ob cujus amorem agens ad operandum inducitur, dicitur *finis operantis*. Quod bonum, vel a voluntate agentis est distinctum eamque suo influxu ad agendum movet, vel a voluntate non est distinctum nec eam proprie ad volendum allicit et determinat, sed tamen, sine causalitatis influxu, rationem suppeditat, propter quam agens velit et operetur. Si primum obtinet; bonum illud dicitur *causa finalis* vel *finis* proprie dictus; si alterum, dicitur *ratio,* vel etiam *finis* minus proprie dictus. Jamvero, quum Deus, utpote in agendo sapientissimus, non possit agere nisi ex amore alicujus boni, et quum in agendo non dependeat a quapiam re externa, dicendum est Deum mundum creasse *propter finem* quidem, at non

[1] What is the earth's age? . . . We come to the conclusion, on a review of the whole subject, that the knowledge at present available is insufficient for an accurate solution of the problem, but that, on the one hand, the physicist can show that the earth and its order had a beginning, and that they must fall within a limit which would have been formerly deemed restricted — say, as a rough and outside approximation, something like 100,000,000 years — while, on the other hand, the geologist can show that so long as we suppose the earth to have been governed by laws in general correspondence with those by which it is still regulated, the history of the stratified rocks and of the development of life cannot possibly be condensed into some twenty or thirty million years — (**Bonney**, *op. cit.*, pp. 533-537).

propter finem, qui esset *causa* actum voluntatis determinans, sed propter finem, qui fuit *ratio sufficiens,* cur Deus res creatas vellet. Unde, divina voluntas habuit rationem volendi mundum, et ista ratio fuit divina bonitas. Vidit enim Deus valde esse conveniens, ut de plenitudine suarum perfectionum cum aliis communicaret, atque suam infinite perfectam essentiam esse dignam, quæ ab aliis cognosceretur, amaretur, laudaretur; unde ob amorem erga suam essentiam decrevit bonitam suam cum aliis communicare et extra se entia producere.

47. Licet respectu volitionis divinæ causa finalis non habeatur, respectu effectuum tamen vere habetur; nam sicut in creaturis finis vere influit in productionem effectus, quatenus sui amorem excitat in voluntate, ad quem amorem sequitur electio et applicatio mediorum; ita et in Deo bonitas finis per creationem attingendi, quin quidpiam novi in divina voluntate causet, vera est causa finalis respectu effectuum. Ad quæstionem igitur, quisnam fuerit finis, quem Deus sibi præstituerit in mundo creando, in hoc articulo respondere oportet. Finis autem alicui operi præstitus duplex esse potest, nimirum, *primarius,* seu, ille qui primo et per se intenditur, et *secundarius,* qui cum primario cohæret et ad illum dirigitur. Finis primarius totius creationis est externa Dei gloria; secundarius vero est perfectio et felicitas creaturarum rationalium. Quum autem hic alter finis cum priore necessario conjungatur, sufficit probare thesim

De Primario Mundi Fine.

48. THESIS VII. — Finis primarius, quem Deus in mundo creando intendit, est ejus gloria externa tum objectiva tum formalis.

Stat. Quæst. — *Gloria* definitur: « *clara cum laude notitia* » — (**S. Th.**, 2, 2, q. 103, a. 1, ad 3).

Dicitur 1°. *clara notitia,* i. e., notitia, quæ non habetur apud unum vel paucos tantum, sed apud multos, ita ut agnitio de alicujus excellentia sit late pervulgata.

Dicitur 2°. *cum laude;* laus enim tunc habetur cum « testificamur de bonitate alicujus in ordine ad finem,

sicut laudamus bene operantem propter finem » — (S. Th., *ib.*).

Ad gloriam igitur constituendam concurrit, *(a) ex parte intellectus,* cognitio et admiratio apud multos excellentiæ alicujus entis ; *(b)* et *ex parte voluntatis,* amor laudativus excellentiæ cognitæ.

Gloria est duplex, *interna* et *externa ;* et hæc utraque gloria est iterum *objectiva* et *formalis.* Gloria interna *(a) objectiva* est perfectio et excellentia alicujus, propter quam dignus est, ut cognoscatur et laudetur ; *(b) formalis* est ipsa cognitio et laus excellentiæ.

Gloria externa *(a) objectiva* est opus externum, quod virtutem et perfectionem operantis manifestat ; *(b) formalis* est cognitio operis et, quod exinde sequitur, laus et admiratio operantis. Sola gloria externa *formalis* est proprie gloria, ut ex gloriæ definitione patet.

Quod ad Deum attinet, ejus gloria *interna (a) objectiva* consistit in perfectione et excellentia divinitatis, qua dignus est, ut cognoscatur et amore laudativo honoretur; *(b) formalis* consistit in divinæ excellentiæ cognitione et fruitione, quas Deus ipse habet. Gloriam internam Deus plenissime et ab æterno possidet, et ideo non ad suam gloriam internam aut acquirendam aut augendam mundum creavit.

Gloria Dei *externa (a) objectiva* est perfectio rerum creatarum perfectionem et excellentiam Creatoris repræsentantium ; gloria Dei *externa (b) formalis* est cognitio et dilectio, quas creaturæ rationales habent de Deo[1].

Hæc gloria externa, tum objectiva tum præcipue

[1] Scholastics distinguished between *external objective* and *external formal glory.* By the external objective glory of God they mean created things in so far as they are adapted by their very existence and activity to bear witness to the Divine perfection, on the supposition that somewhere in creation there are intelligent beings, who can intellectually perceive them and form a judgment on their nature. The external formal glory of God is the acknowledgment of His perfection produced in the minds of intellectual creatures by the contemplation of His works — (Boedder, *Nat. Theology,* p. 386).

formalis, est finis, quem Deus in mundo creando voluit et intendit.

49. Prob. Thesis. Arg. I. — Deus mundum ad suam gloriam creavit, *(a)* si mundus suapte natura divinas perfectiones manifestat ; *(b)* si Deus vult, ut eæ manifestentur; *(c)* si vult, ut eæ cognoscantur. *Atqui (a)* mundus, utpote effectus causæ perfectissimæ, sapientissimæ, potentissimæ, suapte natura Creatoris bonitatem, sapientiam, potentiamque manifestat; *(b)* quum Auctor naturæ id velit, quod res creatæ natura sua faciunt, constat Deum velle, ut per eas suæ perfectiones manifestentur; *(c)* frustra Deus mundo dedisset aptitudinem suas perfectiones manifestandi, nisi vellet, ut eæ cognoscantur et congruis laudibus honorentur ; et proinde, Deus, dum vult suarum perfectionum manifestationem, necessario vult suam externam gloriam tum objectivam tum formalem ; *ergo*.

II. *Prænota*. — Finis, propter quem Deus mundum creavit, debet esse creativa actione dignus ; nam quum medium, *ut medium,* sit propter finem eique subordinetur et, quod consequens est, minoris fine æstimetur pretii, impossibile est, ut Deus creativam actionem (cum divina essentia realiter identicam) et ejusdem actionis effectum dirigat in aliquem finem, qui non sit ipse Deus. Præterea, repugnat Deum habere ut primarium suæ operationis finem aliquid a seipso distinctum ; eo enim ipso, Deus non esset summe independens in agendo, quum finis, et præcipue primarius, se habeat respectu voluntatis, sicut movens respectu rei movendæ. Restat igitur, ut dicatur Deum propter semetipsum condidisse mundum. Unde argumentum : —

Finis, in quem Deus mundum creavit, debet esse sua perfectio vel augenda vel aliquo modo communicanda et manifestanda, — nonnisi hoc duplici modo potest agens suum effectum in se tamquam in finem ordinare. *Atqui* Deus non potest creare ad suam perfectionem augendam ; divina enim perfectio est infinita, et ad infinitam Dei beatitudinem plenissime sufficit. *Ergo* Deus

mundum creavit ad suam perfectionem communicandam et manifestandam. Jamvero, in divinæ perfectionis communicatione consistit externa Dei gloria objective sumpta; in divinæ perfectionis manifestatione habent creaturæ rationales motivum agnoscendi divinam excellentiam, eamque laude et honore prosequendi - quod est externa Dei gloria formaliter sumpta. *Ergo* Deus in suam gloriam externam tum objectivam tum formalem creavit mundum.

Dices : Quærere suam propriam gloriam est vitium philautiæ. *Resp.* Gloriam vel indebitam vel modo indebito quærere est vitium ; neutrum vero facit Deus, ut ex dictis patet.[1]

50. Cor. 1. Ergo omnes res creatæ suo modo exhibent objectivam Dei gloriam. Quo autem perfectior est creatura, eo magis hanc gloriam exhibet. Gloriam autem formalem solæ creaturæ rationales exhibent, quippe quæ divinam externam gloriam contuentes possunt ascendere ad cognitionem divinæ gloriæ internæ, atque ad eam in hac et in altera vita amandam et laudandam proxime se disponere.[2]

[1] When first we meet this doctrine, it is apt to suggest to us the idea of egoism. Yet we have only to reflect to see that such a notion has no place here. For what do we signify by egoism? We mean an undue esteem for our own merits and excellencies, the assigning of an undue prominence to our own interests, and the exploitation of others for our personal advantage. In God this is impossible. There can be no question of self-seeking in Him; for He possesses the infinite good. There can be no exploiting of others; for whatever finite beings possess they possess from His liberality, nor could anything drawn from them add in any way to His beatitude. God's infinite love for Himself is not inordinate. It is strictly due — no more than right reason demands — for He is infinitely worthy of love. Even from our own case we know that love for self, or self-regard, as it is commonly termed, where it does not exceed its legitimate bounds but is governed by reason, so far from being a fault, is a necessary condition of virtue. A well-ordered self-regard protects a man from acts that are unworthy of the nature which God has bestowed on him and of the gifts with which that nature has been enriched, and stimulates him to develop his powers to the highest perfection which is within his reach — (Joyce, *Nat. Theol.*, p. 378).

[2] The primary subjective motive of creation must be the Creator's love of His own intrinsic goodness. The love of that absolute good

Cor. 2. Ergo sicut Deus creare non potuit nisi ob suam gloriam communicandam et manifestandam, ita non potuit entia materialia creare, quin entia rationalia crearet. Nam sine creaturis rationalibus mundus esset opus mancum, quod quidem gloriam Dei objectivam exhiberet; sed quum non extaret, cui manifestatio fieret, finem sibi proprie præstitutum, gloriam scilicet Dei formalem, nullatenus consequi posset; ac « tota rerum universitas esset instar musici instrumenti, quod a nemine posset sonari, vel instar scenicæ fabulæ nullis spectatoribus exhibitæ. Quare, intellectualis creatura est complementum necessarium mundi, non solum quia est præstantissimum ens naturæ, sed quia prorsus requiritur ad hoc, ut irrationalis ac bruta natura rite valeat Deum glorificare » (**Urráburu**, *Cosm.*, p. 339).[1]

is conceived by us as « inducing » the Creator to give it an extrinsic embodiment. The type-idea according to which this embodiment is constructed must exist within the Creator's intelligence, and as such is called the « exemplary » or archetypal cause of creation (passive). The objective realization thereof is the absolutely final objective end, or final cause of creation. In the material universe this realization, exhibited in the purposiveness of each individual part conspiring to the purposiveness of the whole, remains imperfect, and is but a vestige of the original design. In the rational creature it reaches a certain completeness, inasmuch as man's personality, with its intellectual and volitional endowments, is a sort of (analogous) « image » of the Creator, and, as such, a more perfect realization of the creative plan. Moreover, in man's consciousness the creative purpose comes to explicit manifestation and reflective recognition. His intelligent reaction thereon by reverential attitude and orderly conduct realizes the absolutely final purpose of creation, the actual « formal glorifying » of the Creator, so far as that is possible in the present life. But even as the orderly or normal activity of the individual organisms and subordinate parts of the universe develop and complete those organisms and parts, so man's rational conduct perfects him and, as a consequence, results in a state of happiness, the full complement of which is attainable, however, only in a life beyond the present. This completion and happiness of man are said to be the relatively ultimate end of creation, and thereby the creative plan is absolutely completed, the Creator finally, explicitly, formally glorified by the return of the creation, carried up by and in man to conscious inter-communion with the Source and End of the creative act — (**Siegfried**, *Cath. Encycl.*, v. iv., p. 474).

[1] In creating the universe, God aimed principally at being

Cor. 3. Ergo felicitas creaturarum rationalium est finis secundarius, quem Deus mundum creando intendit. Etenim, quod ad hominem attinet, ejus vera, etsi imperfecta, in hac vita felicitas consistit in cognitione et amore, quem de Deo assequitur ; ejus felicitas in vita futura consistet in perfecta Dei cognitione ac perfecto exinde consequente amore. Cognitio autem et amor entium rationalium erga Deum formalem ejus gloriam externam constituunt.[1]

Hi duo fines ita connectuntur, ut primarius absolute intendatur, ideoque semper obtineatur ; secundarius vero nonnisi conditionate intendatur, nimirum, si creatura velit Deum, prout debet, glorificare ; quod facere quum creatura non raro nolit, hic finis nonnumquam frustratur.

Cor. 4. Ergo quum formalis Dei gloria creaturis irrationalibus obtineri nequeat, nisi mediante creatura rati-

glorified by those of His creatures whom He has endowed with reason. Had He omitted to kindle the light of reason, at least in some of His creatures, the universe would be « a book without a reader, a voice with no one to listen, an altar without a priest, a dwelling without inmates » (Tepe, Inst. Theol., v. ii., n. 461). In view of these considerations it has justly been argued that a purely material world without rational denizens would be repugnant — (**Pohle-Preuss**. *God,* etc., p. 86).

[1] Egregie hac de re **Lessius** *(De Div. Perf.,* lib. 14, c. 3): « In summa Dei gloria formaliter et intrinsece includitur summum bonum nostrum, ita ut sine illo concipi nequeat ; et hoc ipso quod Deus illam gloriam intendit et quærit, intendit et quærit summum bonum et commodum nostrum. Unde non minus Deo gratias agere debemus quod quærat gloriam suam, quam quod quærat salutem nostram ; quia gloria ejus est salus nostra. Hoc Ecclesia insinuat, cum ait : *Gratias agimus tibi propter magnam gloriam tuam ;* beneficia enim ipsius in nos sunt gloria ejus. Accedit, quod ipsi nihil commodi proveniat ex omnibus, quæ nobis donat vel pro nobis facit ; sed in illis omnibus solum quærat commodum nostrum : nos soli sumus, in quorum commodum omnia facta sunt. . . Immo summam gloriam suam in summa benevolentia et beneficentia erga nos constituit. Sicut si aliquis princeps potentissimus et nullius egens omnem gloriam suam constitueret in beneficentia et liberalitate erga subditos, summam eorum felicitatem summam duceret esse suam gloriam ; quis non summo amore summaque laude prosequendum diceret hunc principem, eo quod tali modo quærat gloriam ? »

onali, ad hanc, tamquam ad finem proximum, illæ ordinari debent, ut ad suum et omnium creaturarum finem ultimum attingant. Unde, « sicut Deus ratione suæ potentiæ est rerum principium efficiens, ratione suæ sapientiæ principium exemplare; ita propter summam suæ voluntatis bonitatem est omnium finis absolute ultimus, in quo uno omnia tandem conquiescant. Hac triplici relatione absolvitur generalis dependentia, qua res ceteræ cum Deo connectuntur, unde admirabilis ille quasi circulus existit, per quem creata omnia a summo Bono progredientia, in Ipsum regrediuntur » (**Schiffini**, *Th. Nat.*, p. 219).

51. **Schol. De Mundi perfectione.** Doctrinam de absoluta mundi perfectione seu *optimismum*, *Leibnitz*, si non invenit, certe coluit et suis asseclis propugnandam transmisit. Juxta ipsum ratio sufficiens, cur Deus hunc mundum præ infinitis aliis possibilibus elegerit creandum, fuit summa ejus præ illis perfectio.[1]

Critica. Ratio sufficiens, cur Deum hunc mundum et non alium creavit non in perfectione mundi, sed in Dei bonitate est posita (n. 46). Quodsi Deus teneretur ad mundum absolute creandum, actum esset de ejus ad extra libertate.[2] Frustra Leibnitz admittit infinitos mundos *pos-*

[1] Leibnitz represents God as obliged to conform to the principle of the best. This is called the doctrine of ***optimism***. « God is the first reason or cause of things ». He must be « absolutely perfect in power, in wisdom, and in goodness ». This supreme wisdom joined to an infinite goodness « could not fail to choose the best ». For if this were not the best of all possible worlds, God would not have chosen any world, since He never acts unless in accordance with supreme wisdom ». Such is the theory of optimism. It is based on Leibnitz's celebrated principle of ***sufficient reason***. God cannot act without some ***reason***, and since He is perfection itself, this reason can only be the choice of the best; « for if He had chosen one less good, there would be something which might be improved in His work » — (**Janet** et **Seailles**, *Problems of Phil.*, v. ii., p. 322).

[2] The actual universe, being the only one in existence, is ***ipso facto*** the best there ***is***, but it is not the best that ***might be***. And just as God could or could not create a universe, so He could create a better or a worse, without His will being in either case subject to any necessity. The fact is that all the difficulties that

sibiles, dum pro hujus solius creatione admittit rationem sufficientem.

Rosmini censuit solum hunc mundum esse optimum, quia iste præ ceteris divinæ bonitati congruit.[1]

Critica. Congruentia rerum, sicut ipsæ res, pendet a divina voluntate ; et proinde « sicut manifestatur divina bonitas per has res, quæ nunc sunt et per hunc rerum ordinem ; ita potest manifestari per alias creaturas et alio modo ordinatas. Et ideo divina voluntas absque præjudicio bonitatis, justitiæ et sapientiæ potest se extendere in alia, quam quæ fecit» (**S. Th.**, *Q. Disp.* I., q. 1, a. 5).

Horum sententiæ diametro opponitur alia asserens hunc mundum esse omnium possibilium *pessimum.* Ita *Schopenhauer* aliique.[2]

can arise on this point, spring from one and the same confusion. They all assume that creation brings God into a relation to created things as to His object ; whence the attempt naturally follows to see in created things the determining cause of the Divine will. But in reality creation establishes in God no relation to the creature : the relation is unilateral and holds only between the creature and the Creator as between being and its principle. We must accordingly hold firm to this conclusion, that God wills Himself, and necessarily wills only Himself ; and that, if the superabundance of His being and of His love leads Him to will and to love Himself even in the finite participations of His being, we must see therein nothing but a free gift and nothing even remotely resembling a necessity — (**Gilson**, *The Phil. of St. Thomas Aquinas,* p. 116).

[1] Rosmini does not acknowledge the possibility of any other world than the world which now exists. « To the question », he says, « why it was that God willed to create this world rather than another, we must answer that He did so because this world was worthy of the Supreme Goodness, as being that which with the smallest means produced the greatest good, *and, therefore, was the only one possible» (Teodicea,* n. 651). The present world, therefore, according to Rosmini, was created in preference to every other because it alone was possible. And it alone was possible because it was truly worthy of the Supreme Goodness, which, precisely because It is supreme, cannot do anything that is not *best* — (**Liberatore**, *On Universals,* p. 225).

[2] Optimism, says Schopenhauer, is the greatest rubbish that has yet been invented by professors of philosophy. Not only is the testimony of experience in favour of pessimism, but so is that of reason also. Will involves effort, and effort is painful : to will is to suffer, *to will is to be,* therefore the whole of life is suffering.

52. Scholastici docent mundum non esse *absolute* optimum, sed tantum *relative,* i. e., mundum meliorem aut perfectiorem ad determinatum finem consequendum cogitari non posse. Triplici enim sensu mundus *optimus* dici potest : 1°. *Ratione operantis,* quia ab optimo artifice conditus est.[1] 2°. *Ratione finis,* quia ad finem optimum, scilicet, Deum ipsum, destinatus est. 3°. *Ratione gradus gloriæ,* quem manifestat. In primo et altero sensu mundus recte dicitur *absolute optimus,* in sensu tertio solum *relative optimus* censeri debet. Deus enim mundum creavit, ut suam gloriam secundum quemdam gradum libere ab Ipso electum manifestaret, et proinde media optima ad hunc finem consequendum elegit ; est enim sapientis apta media eligere, omnipotentis autem finem intentum reapse attingere ; ergo ad gradum gloriæ divinitus determinatum hic mundus est medium optimum, seu, *relative optimus* dicendus est.[2] Quum autem quovis finito possit esse aliud et aliud sine fine melius, sine fine mundi meliores cogitari et esse possent, quorum quisque esset relative optimus, si Deus illum creare vellet.[3]

« The act of willing, and effort, which is its essence, are like an insatiable thirst. Life is but a struggle for existence with the certainty of being conquered. To will without motive, forever suffering, forever striving, then, to die, and so on for century after century, until the crust of this planet of ours crumbles away, this is Life » — (**Janet,** *loc. cit.,* p. 338).

[1] Deus non potest facere melius, quam sicut fecit, quia non potest facere ex majori sapientia et bonitate » — (**S. Th.,** 1. q. 25, a. 6, ad 1).

[2] The present universe may be regarded as best in a relative sense, *i.e.,* in so far as it is perfectly consonant to the divine idea, adequately serves the purpose for which it was created, and embraces all possible species of natural and supernatural perfection, viz., matter, plants, brute animals, men, angels, grace, glory, hypostatic union — (**Pohle-Preuss,** *op. cit.,* p. 46).

[3] There are in the Divine Mind worlds without number, *each of them good enough for creation.* Consequently there is neither any possible world which, when created, would not be *relatively* the best nor is there any which ought to be called *the very best of all.* If there were any world really possible which would not be *relatively* best, Infinite Wisdom would fall short of its absolute aims. On the other hand, if there were any world *absolutely*

APPENDIX.

De Statu Futuro Hujus Mundi.

53. **Exitus Mundi.** Quæri potest, utrum mundus semper duraturus sit in suo statu præsenti, an tandem aliquando mutandus sit, et quomodo. Imprimis *certum est mundum aliquo modo semper mansurum esse.* Nam « creaturarum naturæ hoc demonstrant, ut nulla earum in nihilum redigatur; quia vel sunt immateriales, et sic in eis non est potentia ad non esse; vel sunt materiales, et sic saltem remanent semper secundum materiam, quæ incorruptibilis est; utpote subjectum existens generationis et corruptionis. Redigere etiam aliquid in nihilum non pertinet ad gratiæ manifestationem, cum magis per hoc divina potentia et bonitas ostendatur, quod res in esse conservat. Unde, simpliciter dicendum est quod nihil omnino in nihilum redigetur » (**S. Th.**, I, q. 104, a. 4). Id, quod ratio docet hac de re, testimonio divino confirmatur: « Didici quod omnia opera, quæ fecit Deus, perseverent in æternum » *(Eccl.,* c. 3, v. 14).

Certum est pariter mundum aliquando a suo statu præsenti defecturum esse. « Cœli sicut fumus liquescent et terra sicut vestimentum atteretur » *(Isaias,* c. 51, v. 6).

Idem comprobatur ex scientiis naturalibus. 1°. Juxta physicos ex jugi corporum collisione est lenta, sed jugis, « conversio » motus in calorem, quin calor æquivalenter denuo convertatur in motum; calor quippe qui a calidioribus ad frigidiora transit, tendit ad se uniformiter diffundendum in universo. Quodsi ita res se habet, futurum est, ut omnis motus transmutetur in calorem; calor autem corporum ad æquilibrium reducatur, quo facto, motus et operatio naturæ cessabunt et mundus ad quemdam statum mortis perveniet.[1]

best, Infinite Power, *i.e.,* power not exhaustible, would be exhausted by its creation — (**Boedder**, *Nat. Theology*, p. 468).

[1] The finite duration of the universe in the past has recently been supplemented by the assertion of its limited duration in the future — an assertion founded on a variety of physical considerations, the most noteworthy among which is the doctrine of the

Juxta astronomos massa solaris condensatur a statu liquido ad solidum, ita ut necesse sit, labentibus sæculis, ejus lumen et calor diminuantur et ultimatim cessent. Extincto autem sole, simul cessabit omnis aquarum evaporatio, omnis nubium formatio, omnis terræ fecundatio, omnis vegetalium et animalium generatio; densissimæ tenebræ et mors universalis terram cooperient.[1]

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progressive dissipation of energy. This doctrine is stated in the most intelligible form, perhaps, by Sir William Thomson, and is embodied in the following propositions: —

« 1°. There is at present in the material world a universal tendency to the dissipation of mechanical energy.

« 2°. Any restoration of mechanical energy, without more than an equivalent of dissipation, is impossible in inanimate material processes, and is probably never effected by material masses either endowed with vegetable life, or subjected to the will of an animated creature.

« 3°. Within a finite time past the earth must have been, and within a finite period of time to come the earth must again be, unfit for the habitation of man as at present constituted, unless operations have been, or are to be, performed, which are impossible under laws to which the known operations going on at present in the material world are subject ». The reasoning by which these conclusions are arrived at is that, inasmuch as all the operations of nature, which constitute its life and action, depend on transformation of energy, and as every such transformation. . . is a degradation from a plane of higher to one of lower transformability or availability, the ultimate effect must be a conversion of all the energy of the world into heat and a reduction of its temperature to absolute uniformity. From this state of uniformity in the diffusion of heat no restoration is possible; for heat admits of transformation into other forms of energy by passing from a body of higher to one of lower temperature — (**Stallo**, *Conceps of Modern Physics*, p. 271).

[1] Physical astronomy declares that many of the heavenly bodies are in the dissolving stage. The moon is unquestionably an extinct, uninhabitable planet. The red fixed stars with their column-like spectra disclosing cinders, and the sun with its spots must be pronounced in a state of decay. However distant the date of the dissolution, it will inevitably come to pass — (**Schanz**, *A Christian Apology*, p. 125).

The sun can no more than a farthing rushlight burn without being consumed. All this enormous store of energy which he so lavishly throws about space, has to be drawn from his capital; and he is ever, of necessity, hurrying along the road that must inevitably terminate in total extinction — (**Gerard**, *Evolutionary Philosophy*, p. 22).

Præterea, systema solare in suo cursu collisurum est post 1,000,000 circiter annos cum stella Vega (in Lyra), versus quam maxima velocitate movetur.[1] Jam, talis concursus, corporum massa et velocitate consideratis, necessario totum destruet.

Quod ad globum nostrum attinet, notum est ejus motum circa suum axem gradatim retardari actione æstuum marinorum. Unde licet concludere terram lente quidem, sed incessanter, progredi ad statum quietis et mortis.[2]

54. Renovatio mundi. Ad hoc punctum ratio nos conducit; sacra autem Scriptura et traditio humana testantur totum mundum corporeum per generalem conflagrationem periturum esse, non quidem eo fine, ut materia in indigesta mole et horrore sempiterno relinquatur, sed ut sordibus purgetur et juxta quemdam insigniorem ordinem renovetur « in gloriam filiorum Dei ».

Jam, si quæratur ad quem finem fiat hæc renovatio, respondendum est cum **S. Thoma** (3, *supplem.*, q. 91, a. 1): « Omnia corporalia propter hominem facta esse

[1] Every half hour we are something like ten thousand miles nearer to the constellation of Lyra — (**Ball**, *Story of the Heavens*, p. 457).

[2] The tides which the moon raises in the earth act as a brake on the rotation of the earth. . . The rotation of the moon long since succumbed to tidal control, but that was because the moon was comparatively small and the tidal power of the earth was enormous. But this is the opposite case. The earth is large and more massive than the moon, the tides raised by the moon are but small and weak, and the earth has not yet completely succumbed to the tidal action. But the tides are constant, they never for an instant relax the effort of control, and they are gradually tending to render the day and the month coincident, though the progress is a very slow one — (**Ball**, *op. cit.*, p. 550).

The daily rotation of the earth was once supposed to afford an instance of motion absolutely invariable. More exact observations, however, have shown that this is not so; the action of the tides in a contrary direction act as a drag, and cause retardation, at a rate which, however slight, is nevertheless appreciable, and must, one day, infallibly destroy the motion altogether, reducing the earth to the inert condition already reached by the moon — (**Gerard**, *loc. cit.*, p. 26).

creduntur, unde et omnia ei dicuntur subjecta. Serviunt autem homini dupliciter : uno modo *ad sustentationem corporalis vitæ,* alio modo *ad profectum cognitionis divinæ,* in quantum homo per ea quæ facta sunt, invisibilia Dei conspicit, ut dicitur *Rom.* c. 1. Primo ergo ministerio creaturarum homo glorificatus nullo modo indigebit, cum ejus corpus sit futurum omnino incorruptibile, divina virtute id faciente per animam, quam immediate glorificat. Secundo etiam ministerio non indigebit homo quantum ad cognitionem intellectivam, quia tali cognitione Deum sancti videbunt immediate per essentiam. Sed ad hanc visionem essentiæ oculus carnis attingere non poterit; et ideo, ut ei etiam solatium congruens de visione divinitatis præbeatur, inspiciet divinitatem in suis effectibus corporalibus, in quibus manifesta indicia divinæ majestatis apparebunt, et præcipue in carne Christi, et post hoc in corporibus beatorum, et deinceps in omnibus aliis corporibus. Et ideo oportebit, ut etiam illa corpora majorem influentiam a divina bonitate suscipiant quam nunc, non tamen speciem variantem, sed addentem cujusdam gloriæ perfectionem; et hæc erit mundi innovatio. Unde simul mundus innovabitur, et homo glorificabitur ».

Ergo mundus corporeus in statu perfectiori persistet in æternum. Qui plura cupit, adeat *Mazella* (De Deo creante, ad fin.), *Urráburu* (Cosm., p. 89, sqq.).

COSMOLOGIÆ PARS SECUNDA.

De Proprietatibus et Constitutivis Corporum.

55. Intellectus humanus nullius rei essentiam potest immediate attingere, sed ad eam pervenit ratiocinando ex proprietatibus, quæ prius cognitæ manifestant, tamquam effectus causam, naturam principii unde derivantur. Quod quum ita sit, oportet primo in hac Cosmologiæ parte de præcipuis corporum proprietatibus tractare, deinde de ultimis corporum principiis constitutivis.

CAPUT PRIMUM.

DE CORPORUM PROPRIETATIBUS.

56. In omnibus corporibus sive organicis sive anorganicis reperiuntur quædam proprietates, quæ ad quantitatem pertinent, - et hæ *absolutæ* vel *relativæ* dici possunt, prout respiciunt corpora in seipsis vel in eorum ad invicem relationibus; et quædam sunt proprietates, quæ spectant ad qualitatem, quæque *activæ* corporum proprietates dici solent. Nunc de his proprietatibus in tribus articulis agemus.

ART. I.

DE ABSOLUTIS CORPORUM PROPRIETATIBUS.

§ 1. De Continuo.

57. Corpus dicitur *continuum* quatenus ejus partes, aliæ cum aliis, ita copulantur, ut ens vere unum *(Ont.,* n. 283) et non multitudinem constituant. Prout partes simul existunt vel successive tantum, habetur continuum *permanens* vel *successivum (Ont.,* 372, n. 3°). Notio *continui* a notione *contigui* et *dissiti* distingui debet. Ea sunt *(a) continua,* quorum extrema sunt *unum,* i.e., quæ uniuntur secundum extremitates; *(b) contigua,* quorum extrema sunt *simul,* i.e., quæ proprios habent limites, sed juxtapositos; *(c) dissita,* quorum extrema spatiis interpositis separantur. Præcipua quæstio circa continuum permanens est de ejus realitate.

58. THESIS VIII. — In corporibus verum continuum, saltem imperfectum, admittendum est.

Stat. Quæst. — Continuum est duplex: *(a) perfectum,* quod totum spatium suæ extensionis implet omnibus interstitiis exclusis *(v.g.,* linea mathematica); *imperfectum,* quod inter suas partes habet spatiola. Corpora physica sunt imperfecte continua, sic, *v.g.,* aqua absorbet copiam ammoniæ, quin majus spatium occupet.

Qui continuum verum respuunt, censent corpora esse congeries elementorum seu particularum, quæ inter se vere unita apparent, sed revera ab invicem separantur. Hæc elementa, inquiunt, in æthere immerguntur ac variis motibus prædita, modo ad invicem accedunt, modo ab invicem recedunt; et quo magis accedunt vel recedunt, eo densius vel rarius evadit corpus, quod constituunt.[1] Hæc elementa sunt ultra omnem modum minima.[2]

In particulis illis, quæ vacuis intervallis ab invicem separatæ existunt, nullam extensionem vel veram continuitatem agnoscunt *dynamistæ,* quarum alii (v.g., *Palmieri,* Cosm., p. 23), existimant has particulas quamvis inextensas et partium expertes, naturali destinatione occupare spatium aliquod divisibile, suaque realitate resistente spatium reale impenetrabile constituere; et proinde eas esse extrinsece divisibiles, quatenus dimidia in eis designari possunt sine fine. Quod continuum

[1] The ultimate participles of bodies do not touch each other; they are separated by relatively large spaces. They move in ether, and in gaseous bodies their distance apart is immense in proportion to their size; it is very considerable in solids and liquids. . . The conception of the density of bodies comprises two distinct but inseparable elements, namely, the ultimate particles which we term atoms or molecules, and the interatomic or intermolecular spaces — (**Wurtz,** *The Atomic Theory,* p. 187).

[2] A cubic centimetre of air would contain twenty-one trillions of molecules, a number which represents twenty-one times the cube of a million. That is to say, 21 followed by eighteen ciphers — (**Wurtz,** *ib.,* p. 322).

If a grain of salt be dissolved in 1,000 grains of distilled water, each grain of the water will contain 1,000th. part of the grain of salt; and if a grain of this water be mixed with 1,000 grains of distilled water, the 1,000th. part of a grain of salt which it held in solution will be uniformly diffused through the latter, se that each grain of the latter solution will contain the 1,000,000th. part of a grain of salt. . . It is evident that this process may be continued to a still greater extent. . . It is known that a grain of musk will impregnate the atmosphere of a room with its odour for a quarter of a century, or more, without suffering any considerable loss in its weight. Every particle of the atmosphere which produces the sense of the odour must contain a certain quantity of the musk — (**Lardner,** *Museum of Science Art,* v. vi., p. 202).

volunt *virtuale* appellatum, quia etsi spatium occupat, non habet partes sui extra partes secundum realitatem, sed hæ, ubicumque sunt, totæ sunt, sicut anima est tota in singulis corporis partibus. *Atomistæ* docent elementa vera continuitate frui, sed ulterius non posse dividi.

59. **Prob. thesis. Arg. I.** — Circa proprietates corporum non est admittenda theoria, 1°. quæ ineluctabili hominum persuasioni contrariatur, 2°. quæque phænomena naturæ physicæ, 3°. ejusque operationes impossibilia explicatu reddit ; *atqui* hæc incommoda vitari nequeunt, si vera corporum continuitas negatur ; *ergo*.

Prob. min. per partes. 1°. Omnes homines ita corporibus afficiuntur, ut veram continuitatem eis inesse ineluctabili pondere naturæ admittere cogantur ; absonum autem est, ut natura ad falsum admittendum nos cogat. Præterea, ad hanc persuasionem (si falsam) corrigendam, nec *a priori,* nec *a posteriori* ulla suppeditat ratio : — *non a priori, (a)* quia continuitas non est in se repugnans, secus mente concipi non posset, et periret non solum ejus realitas, sed etiam ejus apparentia ; *(b)* rueret fundamentum geometriæ, cujus est de *continuo* tractare ; *(c)* vera, et quidem perfecta, continuitas de facto datur in temporis et motus duratione, et juxta plures in æthere,[1] si existit ;[2] — *non a posteriori,* quia, instrumentis etiam potentissimis adhibitis, deprehendi nequit illa elementorum discretio, quam adversarii jactitant, sed semper ali-

[1] I hold that ether is most certainly not atomic — not discontinuous, it is an absolutely continuous medium, without breaks or gaps or space of any kind in it — (**Lodge**, *Modern Views of Electricity*, p. 410).

[2] L'éther est un milieu hypothétique, postulé par les physiciens pour éviter l'action à distance, mais ce n'est ni un fait constaté, ni même un fait constatable — (**Nys**, *Cosm.*, v. i., p. 334).

L'hypothèse de l'éther est aujourd'hui battue en brèche. Il y a déjà longtemps, H. Poincaré écrivait. . . : « Peu importe au physicien que l'éther existe réellement : c'est l'affaire des métaphysiciens. L'essentiel pour nous c'est que tout se passe comme s'il existait et que cette hypothèse est commode pour l'explication des phénomènes. . . Un jour viendra sans doute où l'éther sera rejeté comme inutile » — (**Decoqs**, *Essai Critique sur l'Hylémorphisme*, p. 67).

qua cernitur continuitas saltem imperfecta.[1] Et tamen facile deprehendi debet, si, ut plures docent, tanta est distantia inter moleculas, ut in massa plus vacui insit, quam materiæ.[2] Immo, quum spectrum corporum solidorum et fluidorum semper sit continuum, hæc corpora esse continua saltem imperfecte, a *posteriori* probatum videtur. Quare «quum corpora extensione continua saltem videantur prædita esse, neganti realitatem continuitatis incumbit munus apparentiam objectivam extensionis continuæ explicare » (**Dario**, *Prælect. Cosm.*, p. 58).

2°. Si particula corpora constituentes ab invicem distant, spatiola interposita vel prorsus vacua sunt, vel aliqua subtili materia sunt repleta; *atqui* si vacua dican-

[1] « Moleculæ materiæ ita parvæ sunt, ut neque ipsas neque earum motus videre possimus, etiam ope microscopii potentis » — (**Secchi**, *Unità delle Forze Fisiche*, v. i., p. 103).

It is possible to form a notion of the weight of a molecule of hydrogen, and thus we find that two hundred million million million of them would weigh a milligrame (equal to about one sixty-fifth of a grain avoirdupois); while the multitude in which the molecules are present is such that *the smallest particle visible under the microscope* would, it has been calculated, hold from sixty to one hundred million molecules of gas — (**Ball**, *Story of the Sun*, p. 259).

The actual sizes of molecules is a matter which has not yet been determined with exactness. . . Some general idea of their order of magnitude may be gathered from Lord Kelvin's calculation, that if a single drop of water were magnified to the size of the earth, each molecule being proportionately enlarged, the grained appearance which the mass would present would probably be finer than that of a heap of cricket balls, but coarser than a heap of small shot — (**Newth**, *Inorganic Chemistry*, p. 3).

[2] Take a crystal. Under the microscope its mass appears compact and homogeneous. In its facet and cleavage planes there is no absence of continuity. And, nevertless, matter is not continuous in it. . . The smallest fragments of the crystal are formed of aggregations of innumerable molecules. . . Each of these molecules is formed of atoms varying in number. They are *situated at distances sensible compared with their dimensions* — (**Wurtz**, *op. cit.*, p. 310).

. . . The atoms are either mere points, wholly without extension, or *their dimensions are infinitely small as compared with the distances between them*, whatever be the state of aggregation of the substance into which they enter — (**Stallo**, *Concepts of Modern Physics*, p. 91).

tur, plura phænomena (*v.g.*, caloris, lucis, attractionis, etc.), quæ in natura physica obtinent, nullam explicationem idoneam accipere possunt;[1] si aliqua materia subtili (æthere) repleta dicantur, quærendum est num ista materia sit continua, necne; *si posterius,* redit totum argumentum; *si prius* datur vera continuitas in materia.[2]

[1] Some of the fundamental principles and laws of nature, as revealed in modern physics, are incompatible with the immediate action of one body on another, in the hypothesis that the two are separated by an intervening vacuum. . . If there be one principle or law in modern physics more fundamental and of more universal application than any other, it is the great law — or rather two laws — of Newton, that the attraction between two bodies is directly proportional to their mass, and inversely proportioned to the square of their distance from each other. It is to the last-mentioned law that the attention of the reader is more particularly invited; for it not only rules the attraction of bodies and the phenomena of gravitation, but likewise the phenomena of intensity of sound, of radiant heat, of light, of electrical attractions and repulsions. Now, if there existed a vacuum between the efficient cause and the subject, it is difficult to discover any sufficient reason for a decrease in the energy of the force in proportion to the distance. There could be no reason on the part of the force; since, according to the hypothesis, it is the same force of the same agent. There could be no reason on the part of the subject; since it is the same, and its disposition is supposed to be the same. Finally: There could be no reason on the part of the vacuum; because a vacuum, absolutely in itself, is a nonentity. Howsoever, therefore, its extrinsic and imposed dimensions might vary, in no case could it affect the intensity of the force. Consequently there is nothing to prevent a bodily force from producing its effect on the subject at a distance of millions upon millions of miles, with the same intensity as though it were separated from the same subject only by the thousandth part of an inch. What is there to hinder it? But should this be the case, the first law — viz., that the attraction between any two given bodies is directly proportioned to their mass — would have no counterpoise; and, as a consequence, all bodies would have an irresistible tendency to centre in the largest and weightiest of the heavenly bodies, as the common focus, in virtue of its superior mass — (**Harper**, *Metaphysics of the School*, v. iii., pp. 298-301).

[2] Some physicists have regarded ether as composed of minute particles, of a sort of atoms, infinitesimal in comparison with those of ordinary matter, but still atoms. This view was taken by Lord Kelvin, by Wetham, and taken as the current ether theory by Herbert Spencer. It is clear that, as an explanation of distance action, ether, thus understood, simply shifts the question. If it is composed of minute particles, either these must be separated by

3°. *(a)* Operationes vitales inferioris ordinis (*v. g.*, auctio, nutritio), utpote operationes immanentes, terminari debent in subjecto, a quo procedunt; *atqui* si diversæ particulæ corporis viventis non continuantur, sed discretæ existunt, operationes vitales aut *transeuntes* dici debent, aut suos effectus non producunt nisi in suis propriis facultatibus, — quod nemo procul dubio affirmare audebit. Accedit, quod abjecta continuitate corporis viventis, anima simul inesset pluribus locis discretis, id quod naturaliter fieri nequit.[1]

(b) Negata omni corporum continuitate, sensatio continui nullo modo explicari posset. Et quidem, *non ex*

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absolute void, and we are thus brought back to our starting point, or they demand a second ether to explain the first, and we must admit an infinity of similar fluids, of which each and all are absolutely valueless as an interpretation of distance action.

The opposite view, more generally maintained nowadays, is that ether is not composed of atoms separated by void space, but is itself absolutely continuous. This conception is repeatedly expressed by Joseph Larmor, in his famous work *Æther and Matter*. . . . The same conception is also entertained by Sir Oliver Lodge, who sums up in the following words his own view on the subject. « As far as we know, it (ether) appears to be a perfectly homogeneous incompressible continuous body, incapable of being resolved into simpler elements, or atoms; it is, in fact, continuous, not molecular » — (**Perrier**, *Revival of Schol. Phil.*, p. 103).

[1] Una certa discontinuità non presenta inconvenienti seri in cosmologia pura. . . Non è piu così in psicologia, dove tutto ciò che potrebbe mettere in periculo l'unità sostanziale del vivente. dev' essere accolto con molta cautela. Questa unità è un fatto attestato immediatamente in noi dalla conscienza, e, nell' animale come nella pianta, si revela con l'evidente subordinazione delle attività elementari al bene di tutto intero l'individuo. Questa unità richiede la presenza di una forma sostanziale unica, il principio vitale, ovvero tollera la presenza simultanea di altre forme subordinate? . . . Ma allora come può informare una materia discontinua? Nessun filosofo che abbia anche poco riflettuto a quello che è una forma vorra ammettere che la cosa sia possibile. Essendo la quantità misura dell'essere, come negare che una divisione quantitativa conduce sempre ad una distinzione entitativa? Nè si può dire che la contiguità è sufficiente, poiche non impedisce la distinzione reale degli individui che si trovano a contatto. Del resto, come parlare di contiguità senza contradire alle conclusioni de fisici? Questi ci dicono infatti che le molecole sono separate de intervalli che solo allo zero assoluto diventerebbero rigorosamente nulli — (**Geny**, *'Gregorianum'*, 1920, p. 111).

parte corporum, quum hæc constarent elementis inextensis, quæ activitatem materialem et extensam exserere non possent; *non ex parte sensuum,* quum horum organa et ipsa inextensis constarent.

Thesis confirmatur ex eo, quod etiam fautores discontinuitatis materiæ suum systema non ut certum, sed ut meram hypothesim proponunt.[1] Quod si peritissimi, etiam inter ejus fautores, physici ita temperate loquuntur, « nescio an tolerari sine stomacho possit illa quorumdam recentiorum scriptorum arrogantia qui doctrinam incertam ac hypotheticam ceteris obtrudere conantur, nec ferre æquo animo volunt, quod philosophi veterum Doctorum vestigiis insistentes, continuam extensionem teneant, idoneis sane fundamentis innixi. Verum enimvero hypothesis materiæ discretæ necessaria est ad alias hypotheses physicis carissimas circa lucem, calorem, et alias vires naturæ fulciendas, ideoque mordicus eam, reclamante licet experientia, tenendam sibi esse judicant, ne videlicet vel abjicere penitus, vel certe emendare, ceteras hypotheses cogantur » (**Urráburu**, *Cosm.*, p. 827).

[1] We will consider (inquit **Wurtz**) the *hypothesis of the discontinuity of matter* which would be formed of molecules and atoms in motion, in a medium which fills the entire universe and penetrates all bodies — the ether *(The Atomic Theory,* p. 308).

. . . These phenomena of heat *almost* force upon us the conviction that the various forms of matter. . . consist of isolated particles separated by comparatively wide intervals — (**Cooke**, *The New Chemistry,* p. 12).

I wish to declare my belief that the atomic theory beautiful and consistent as it appears, is only a temporary expedient for representing the facts of chemistry to the mind. . . I have the conviction that it is a temporary scaffolding around the imperfect building, which will be removed as soon as its usefulness is passed. I have been called a blind partisan of the atomic theory, etc. — *(Idem,* p. 118).

Nous admettons la discontinuité de la matière. Remarquons que la concordance des faits expérimentaux avec les conséquences mathématiques obtenues en partant de *cette hypothèse n'est pas une preuve de la discontinuité de la matière. . . On pourrait supposer la matière continue et la concordance que nous signalons existerait encore* — (**Poincaré**, *Théorie de la Lumière,* p. 3).

«Confessedly the atomic theory is but an hypothesis», ait **Stallo** *(op. cit.,* p. 85), qui deinde pergit ad eam impugnandam.

60. Schol. 1. De modo, quo partes in continuo insint. — Quæstio non versatur circa partes essentiales *(i.e.*, materiam et formam), sed circa partes integrales, ut sunt partes, in quas arundo, *v.g.*, dividi potest. De qua quæstione duæ sunt sententiæ. Prima sententia affirmat partes nonnisi *potentia* contineri in continuo, seu expressius, antequam fit designatio extrinseca, *entitas* partium adest quidem in continuo, sed hæ partes propriis limitibus non fruuntur, et proinde partes, formaliter ut partes, ibi non habentur.

Præcipuæ rationes pro hac sententia sunt: *(a)* Si partes *actu* inessent continuo, singulæ haberent proprios limites, et constituerent plura in actu; continuum vero, ut aliquid unum *actu,* multiplex *potentia,* concipi debet. *(b)* Partes in continuo *actu* contentæ essent infinitæ vel finitæ: — *non infinitæ,* ut patet; *non finitæ,* quia tales essent indivisibiles vel divisibiles: *non indivisibiles,* quia continuum talibus constare nequit, quum pars debeat esse ejusdem naturæ ac totam; *non divisibiles,* quia de his recurret quæstio, an constet partibus actu distinctis necne. De hac sententia cf. *Pesch* (Phil. Nat., v. i., p. 25), *Van der Aa* (v. iii., p. 13), *Lahousse* (Cosm., p. 168) *De San* (Cosm., p. 232) *Monaco,* (Cosm., p. 242) *Nys* (Cosm., v. ii. p. 96). Et pro eadem citatur *S. Thomas:* « Partes continui sunt *potentia* in toto ante divisionem » *(Meta.,* lib. 9, lect. 10; et alibi).

Secunda sententia affirmat partes ante omnem divisionem et designationem esse actu inter se distinctas, non ita quidem, ut partes divisæ vel separatæ existant, sed quod entitas uniuscujusque partis designabilis alia est ac entitas cujuslibet alterius. Præcipuæ rationes: — *(a)* Pars, quæ a toto separatur, debet ante separationem actu et secundum suam specificam rationem toti inesse; secus enim mechanica totius separatio entitatem partis gigneret, quod certo dici nequit. *(b)* Quantitas continua est ea, quæ partes extra partes habet simul unitas; quod autem est extra aliud, ab hoc alio *actu* distinguitur, secus non esset extra, sed idem cum alio. *(c)* Si partes con-

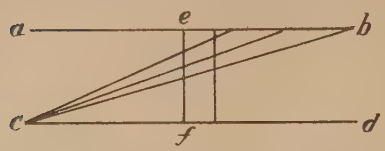
tinui non essent actu distinctæ, eadem entitas (pars) simul et sub eodem respectu esset ad dextram et sinistram, etc., totius; id quod minime fieri potest.

Hanc sententiam defendunt plures veteres, quos sequuntur *Liberatore* (Cosm., p. 72), *Lepidi* (Cosm., p. 96) et *Urráburu* (Cosm., p. 846). Plura loca ex *S. Thoma* in favorem hujus sententiæ citantur, ut : « Omne continuum habet partes *sejunctas, ita ut hæc sit una pars et hæc alia*, et dividitur in partes diversas et distinctas loco» *(Phys.*, lib. 6, lect. 1).

Attamen non est adeo difficile utramque opinionem reconciliare. Assertores enim primæ opinionis ad notionem « partis actualis » postulare videntur, ut adsint actuales limites sive divisione sive aliqua designatione inducti, qui quum in continuo non dentur, ibi partes non actu sed potentia dumtaxat adesse existimant. Eorum adversarii negantes ad notionem partis actualis requiri limites actuales, partes actu adesse in continuo docent. Unde, quæstio resolvitur in modum loquendi et in veram 'partis' significationem (cf. *O'Neill,* Cosm., v. i., p. 198).

61. Schol. 2. **De continui divisibilitate.** Divisibilitas est illa proprietas, vi cujus partes continui separari possunt. Quæri autem potest, quousque divisibilitas continui se extendat. Ad quam quæstionem solvendam oportet distinguere inter continuum mathematicum et continuum physicum.

1. Quod ad continuum *mathematicum* attinet, certum est illud esse divisibile in infinitum seu potius indefinite. In tali enim continuo non consideratur nisi mera quantitas; quantitas vero quantumvis diminuta semper servat partes (et quidem ejusdem naturæ ac totum), et proinde divisibilitatem. Figura geometrica rem optime illustrabit : Sit inter lineas parallelas *ab* et *cd* linea perpendicularis *ef*.



Ex puncto *c* ducantur lineæ ad lineam *eb,* quæ indefinite extendi potest. Jamvero, in tot partes dividi potest linea *ef,* quot lineæ rectæ a puncto *c* ad diversas partes lineæ *eb* possunt deduci; *atqui* quum linea *eb* indefinite protendi possit, lineæ rectæ, quæ a puncto *c* ad talem lineam deduci possunt, sunt numero indefinitæ, et quum rectæ sint, necesse est, ut *ef* scindant in diversis partibus. Ergo linea *ef,* et proinde continuum mathematicum, sine fine dividi potest.

2. Quod ad continuum *physicum* attinet, scholastici generatim negant possibilitatem divisionis in infinitum; quæ doctrina confirmatur legibus chimicis, juxta quas moleculæ corporum certam sibi materiam vindicant, et in analysi chimica materia usque ad minimas partes resolvitur. Nam corpus physicum, inquiunt, quum constet materia et forma, dividi nequit, nisi in quantum talis divisio non impediat unionem materiæ et formæ. *Atqui* « quum forma substantialis determinatam materiam requirat, divisio ultra certos limites etiam a Deo protrahi non potest, quin forma substantialis ab essendo deficiat » (**Lahousse**, *Cosm.,* p. 174). Attamen opinio docens divisibilitatem in infinitum etiam corporis physici probabilitate haud caret. In quavis enim quantumvis parva parte, utpote extensa, designari possunt diversæ partes, quæ proinde divisibilitatem præ se ferunt. Quum vero divisio non sit annihilatio, hæ partes divisæ nec desinunt esse nec habere extensionem. Ubi autem extensio, ibi divisibilitas, et sic in infinitum.[1]

[1] Quantity and quantified material substances are indefinitely divisible. So long as there is extension, — part outside part — further division is possible; and any integrant part, however minute, of any body must have extension. You cannot, however persevering may be your efforts, mince extended bodies into mathematical

Quare, *(a)* corpus physicum, etsi viribus naturalibus unice usque ad certum gradum (ad atomos vel electrones) dividi potest, per se tamen est sine fine divisibile. Deus igitur sua potest potentia absoluta ulterius procedere in divisione, et sub quantitate quantumvis minima specificam corporis naturam conservare, ita ut adsit divisibilitas ejus in indefinitum (cf. *Van der Aa.* Cosm., p. 18, *Schaaf,* Cosm., nn. 40, 94).

§ 2. De Rarefactione et Condensatione.

62. THESIS IX. — Rarefactio et condensatio realis nihil repugnans continent: ipsis sepositis, plura physicæ naturæ phenomena idoneam explicationem accipere nequeunt.

Stat. Quæst. — *Rarum* dicitur illud, quod sub magnis dimensionibus parum materiæ habet; *densum* e contra dicitur illud, quod sub parvis dimensionibus multum materiæ habet. Nimirum, corpus dicitur *rarum,* si relate ad aliud æquales habens dimensiones, parum materiæ continet; et dicitur densum, si, comparatione facta cum alio æqualium dimensionum, multum habet materiæ. Sed sicut corpus dicitur rarum vel densum respective *ad aliud,* ita unum idemque corpus est rarum vel densum relate *ad seipsum,* prout successive occupat majus vel minus spatium, quantitate materiæ nec aucta nec diminuta. Sic, *v.g.,* parte aeris e campana ope machinæ pneumaticæ expulsa, pars, quæ remanet, quæque prius parvum spatium campanæ occupabat, nunc per totum hujus spatium diffunditur seu rarescit. Condensatur autem aer, introducto in campanam alio corpore. Exinde colligitur notio rarefactionis et condensationis. *Rarefactio* est motus (alteratio), quo corpus majus spatium occupare incipit. *Condensatio* est motus, quo corpus minus spatium occupare incipit.

points. It is true St. Thomas admits, that physically it is possible to reach an ultimate beyond which division is impossible. But if such ultimate could practically be attained, what would be its condition? It is obvious that so long as the substance is informed by quantity, it is physically capable of further division: because it has part outside part in space — (**Harper**, *op. cit.*, v. ii., p. 231).

Hoc spatium, quod corpus occupat, dicitur ejusdem *volumen*, quod est duplex: *reale* et *apparens*. Volumen *reale* est spatium, quod materia corporis occupat, poris hinc illinc occurrentibus non attentis. Volumen *apparens* est spatium materiæ, simul cum spatio pororum. Unde, volumen apparens duplex complectitur elementum, *scil.*, volumen reale et poros seu, ut moderni volunt, volumen *atomicum* et spatium *interatomicum*.

Juxta hoc duplex volumen scholastici distinguunt duplicem rarefactionem et condensationem, scil., *realem* et *apparentem*. Tunc corpus, inquiunt, subit *(a) realem* rarefactionem aut condensationem, quando majus aut minus spatium reale occupare incipit, absque ullo novæ materiæ accessu vel recessu; *(b) apparentem*, quando volumen reale (seu atomicum) immutatum persistit, sed pori (spatium interatomicum) dilatantur vel constringuntur (cf. *Lahousse*, Cosm., p. 240; *Donat*, Cosm., p. 984).

Physici nonnisi de hac altera rarefactione et condensatione loquuntur, rarefactionem et condensationem realem ut impossibilem infitiantur. Contra, scholastici, dum concedunt in corporibus existere poros (quamvis non tales, qui omnem de medio tollant continuitatem[1]), et proinde dari rarefactionem et condensationem apparentem per auctionem et contractionem pororum, negant omnem rarefactionem et condensationem ita peragi, aut posse hoc modo explicari nonnulla naturæ physicæ phænomena (cf. *Nys*, Cosm., v. ii., pp. 164 sqq.; *Pesch*, Phil. Nat., v. ii., p. 355; *De San.*, pp. 366, sqq).

63. Prob. Thesis. PARS 1ª. *(. . . nihil repugnans continent).* **Arg.** – Corpus physicum naturaliter habere debet aliquas dimensiones, indifferens autem est (intra quosdam limites suæ specificæ naturæ consentaneos) ad has vel illas habendas, et proinde ut unam præ alia habeat extensionem, necesse est, ut accedat qualitas specialis *(scil.*, densitatis vel raritatis), quæ ejus dimensiones seu volumen

[1] Surely this phenomenon *(porositas)* does not necessarily postulate an *absolute* separation; any more than the regular links in a chain suppose entire isolation of the links – (**Harper**, v. ii., p. 245).

determinet. Nam sicut ceteræ corporum mutationes explicantur per *intensionem* vel *remissionem* qualitatum suarum, æquum est, ut eodem modo explicentur mutationes, quæ rarefactionem et condensationem constituunt.[1] *Atqui* hæc qualitas, a qua proxime dependent corporis dimensiones, potest influxu agentium naturalium *(v. g.*, caloris, frigoris) intendi vel remitti, et inde fit, ut dimensiones corporis majores vel minores evadant, seu ut corpus vere rarescat vel condensetur. Nihil igitur repugnans in reali corporum rarefactione et condensatione contineri dici potest.[2] Nec hoc difficilius est intellectu, quam, quod eadem anima, quæ totum corpus infantuli informat, postea totum corpus hominis adulti informet. Et sicut globulus, qui super terram volvitur, modo velociter, modo tarde, idem spatium percurrit, nec quum tarde procedit, morulas facit, nec quum velociter movet, partes spatii prætermit-

[1] « Sicut aliquid fit albius (ait **S. Thomas**) non superaddito alio albo, sed per intensionem albedinis præexistentis, in quantum scil., subjectum reducitur in actum perfectioris albedinis, ita etiam potest fieri aliquid majus absque additione alicujus corporis magnitudinem habentis, per hoc quod materia, quæ prius erat sub parvis dimensionibus, postea sit facta sub majoribus » — *(De gener. et corrupt.*, lib. 2, lect. 14).

[2] The material substance of a body that is now greater, now smaller, in volume, is one and the same. This is illustrated by an instance of substantial transformation — that of gases into water. It is experimentally certain that no subtraction of matter has taken place during the change: for the weight of the water, as modern chemistry assures us, is exactly equal to the combined weight of the oxygen and hydrogen. Yet the difference between the combined volumes of the two gases and the volume of the resultant water is very great indeed. How is this phenomenon explained, according to the scholastic philosophy? In this wise: — The matter remaining identically the same under the preceding substantial forms of the two gases as under the supervening form of the water, was of itself in potentiality to either size of volume, — capable of either, and successively of both. From the above demonstration Aristotle draws a corollary: that condensation and rarefaction do not take place by any subtraction or addition of matter, but exclusively as the accidental result of a change of quantity. In condensation, the matter is under a smaller volume, by the reduction to act of its previous potentiality to such dimensions; in rarefaction of the same body, the same matter is under a larger volume, by the reduction to act of its previous potentiality, to these greater dimensions — (**Harper**, v. iii., p. 329).

tit ; ita unum idemque corpus potest habere diversas extensiones absque interruptione suæ continuitatis, *scil.*, per veram rarefactionem et condensationem.

64. Pars 2ª. *(ipsis sepositis plura phænomena explicari nequeunt...)*. **Arg. I.** — Adversarii, rarefactione et condensatione realibus sepositis, variationes voluminis, quas in diversis adjunctis idem corpus exhibet, explicare conantur per meram dilatationem et constrictionem pororum seu spatii interatomici, sine alteratione in volumine atomico ; *atqui* si, in tali hypothesi, fingitur inter atomos ita distantes nullam adesse materiam, explicari nequeunt phænomena luminis, electricitatis, attractionis, etc., quin recursus habeatur ad incommodum actionis in distans *(Ont.,* n. 391) ; si ponatur materia interatomica, redintegratur tota quæstio de hujus materiæ rarefactione et condensatione.[1] Nulla igitur remanet via effugiendæ actionis in distans. « Supponunt qui actionem in distans vitare volunt, atomos perpetuo motu impulsas in omnes directiones moveri, in se mutuo impingere, resilire; *atqui* talis suppositio est impossibilis ; — nam, *(a)* iste motus perpetuus est nova hypothesis ad priorem hypothesim stabiliendam et explicandam ; sed et ipsa explicanda erit per novam tertiam hypothesim, scilicet, quænam sit *causa hujus motus*, ejusque *variarum directionum, velocitatum, amplitudinum ;* quæ ipsa hypothetica causa aut gratuito affirmabitur esse ipse Deus, aut aliqua naturalis causa, iterum explicanda ; *(b)* in se mutuo impingere, resilire

[1] There have been physicists who have essayed to fill up the intervening spaces with ether. But the question then recurs, as to the constitution of this ether. Some have maintained that the ether is continuous. . . But others maintain that the constitution of the ether is similar to that of other bodies. But if ether, too, is composed of molecules and atoms, how are the resulting spaces to be filled up ? By another fluid ? We are under the tyranny of an infinite series — (**Harper**, v. iii., p. 332).

Is it *(æther)* a homogeneous, continuous medium ? Is it formed of atoms of a second order ? . . . This is a question which can be brought forward, but which cannot be solved. Poisson inclined towards the hypothesis of the discontinuity of the ether ; it seemed to him difficult to admit that luminous vibrations could be propagated in a continuous medium — (**Wurtz**, *Atomic Theory*, p. 309).

recte vel oblique, et tamen suum motum tantum conservare quantum habebant, atomi non possunt nisi sint perfecte elasticæ ; *atqui* perfecte elasticæ non possunt esse nisi sint deformabiles, condensabiles, et rarefactibiles ; ac proinde atomi non possunt supponi immutabiles quoad volumen ; et præterea de singulis atomis redit tota quæstio, quid sit earum condensatio et rarefactio ; *ergo*» (**Van der Aa**, *Cosm.*, p. 37).

65. II. — Sententia scholastica optime deservit ad explicanda plurima problemata physica, quæ ceteroquin explicari vix possunt. Et sane, ipsa admissa : —

1°. Redditur ratio sufficiens et valde obvia, cur diversis corporum speciebus naturaliter competat diversa densitas. Qualitas enim, qua dimensiones corporis determinantur, derivatur a principio specifico corporis eique proportionatur ; *atqui* sicut principium specificum facit, ut corpus sit talis vel talis naturæ, ita prædicta qualitas facit, ut sit talis vel talis densitatis. Hæc qualitas, secus ac principium specificum, non consistit in indivisibili, sed plus minusve augeri et remitti potest, salva corporis natura substantiali, quemadmodum calor vitalis et naturalis in homine quosdam gradus intensionis et remissionis compatitur.

2°. Redditur ratio, cur idem corpus a solido ad liquidum vel aeriformem statum transire possit, quin amittat suam continuitatem, vel signa præbeat vacuitatum interatomicarum, de quibus adversarii loquuntur ; calor enim potest corporis massam ita immutare, ut corpus in singulis suis partibus exigat majorem præsentiam.[1]

[1] With regard to liquid and gaseous bodies, there are very great difficulties in viewing them as consisting of separate and distant molecules. If, for instance, we assume with Young that the particles in water are comparatively as distant from each other as 100 men would be if dispersed at equal distances over the surface of England, the distance of these particles, when the water is expanded into steam, would be increased more than forty times, so that the 100 men would be reduced to two ; and by further increasing the temperature this distance may be indefinitely increased ; adding to the effects of temperature rarefaction by the air-pump, we may again increase the distance so that, if we as-

3°. Redditur ratio motus localis ; nemo enim non videt quantum impediretur motus, singulis particulis suum locum pertinaciter defendentibus contra corpus movens.[1]

4°. Redditur ratio, cur corpora dilatentur per calorem et per frigus contrahantur ; nam quum per calorem et frigus massa materialis aliter se habeat *qualitative,* nil mirum si nova dispositio sic inducta exigat alterationem *quantitativam* sibi proportionatam.[2]

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sume any original distance, we ought, by expansion, to increase it to a point at which the distance between molecule and molecule should become measurable. But no extent of rarefaction, whether by heat or the air-pump, or both, makes the slightest change in the apparent continuity of matter; and gases, I find, retain their peculiar character, as far as a judgment of it can be formed from its effect on the electric spark, throughout any extent of rarefaction which can experimentally be applied to them: thus the electric spark in protoxide of nitrogen, however attenuated, presents a crimson tint, that in carbonic oxide a greenish tint — (**Grove**, *Correlation of Physical Forces,* p. 170).

[1] Locomotion is rendered compossible with the uninterrupted and continuous quantity of the material universe by the alternate condensation and rarefaction of bodies. Since the matter of each body is in potentiality to a multitude of changes in its quantity, such potentiality may be reduced to act in this way or that, by the impact of another body. Thus the air that immediately surrounds the projected cannon-ball is condensed to allow of the ball's transit, and expands again after the ball's passage in obedience to its normal rarity ; and so instantly and continuously fills up the space left by the projectile as it flies along the path of its projectory — (**Harper**, v. iii., p. 331).

Comme le dit le Stagirite, dans un monde où le vide n'a point de place, la théorie des condensations et dilatations réelles conditionne la possibilité du mouvement local. Le déplacement d'un corps deviendrait inintelligible, si les êtres matériels placés sur sa route ne pouvaient, par des changements rapides de leur volume, lui ménager un passage à travers l'espace — (**Nys**, *Cosm.*, v. ii, p. 165).

[2] Ce phénomène ne soulève aucune difficulté spéciale : il rentre comme tous les autres, sous la loi générale de la mutabilité. Aussi les physiciens modernes, qui la rejettent paraissent beaucoup moins logiques que leurs devanciers du moyen âge. En effet, de l'avis unanime, toutes les propriétés chimiques et physiques de la matière sont susceptibles de modifications nombreuses. L'affinité, la force calorifique, l'électricité, les énergies attractives et répulsives subissent sans trêve des variations dans leur intensité respective. L'extension, dit-on, reste invariable. D'où vient donc ce privilège? Y a-t-il un seul fait qui légitime ?

A cette loi universelle de changement, il n'existait jusqu'ici

5°. Redditur ratio variationum attractionis et repulsionis molecularis. Nam sicut virtus unita et recollecta agit validius, debilius vero divisa et dispersa; ita quantitas materiæ, prout condensatur vel rarescit, suam vim attrahendi et repellendi fortius vel debilius exercet. Idem valet de cohæsione molecolari in liquidis et de nisu expansivo in aeriformibus (cf. *De San.* Cosm. nn. 290, 293).

6°. Redditur ratio propagationis luminis, caloris, etc. Nihil enim vetat, quominus causæ physicæ gignant in æthere vel atmosphæra aliisve corporis successivas rarefactiones et condensationes per totam massam.[1] Quibus datis, prædictæ propagationes congrue explicantur; nam dum una pars rarescit, alia densatur et vice versa, et proinde per totum medium dantur vibrationes et undulationes (cf. *Van der Aa,* loc. cit.; *Urráburu,* Cosm., q. 1296). Admissa, ut hypothesi,[2] realitate ætheris, in

qu'une exception en faveur de la masse; celle-ci, disait-on, demeure inchangée au sein de toutes les métamorphoses dont elle est le théâtre. Or les physiciens actuels viennent de la supprimer. A moins donc d'identifier gratuitement la quantité dimensive avec ses circumscriptions spatiales, on ne peut nier que la théorie de l'invariabilité absolue de volume réel est dénuée de tout fondement scientifique, et constitue une exception arbitraire à une règle générale des mieux établies — (**Nys,** *ib.* p. 167).

[1] If it be said that there is not sufficient elasticity in ordinary matter for the transmission of undulations with such velocity as light is known to travel, this may be so if the vibrations be supposed exactly analogous to those of sound: but that molecular motion *can* travel with equal and even greater velocity than light, is shown by the rapidity with which electricity traverses a metal wire where each particle of metal is undoubtedly affected. It has, moreover, been shown by the experiments of Mr. Latimer Clarke upon a length of wire of 760 miles, that whatever be the intensity of electrical currents, they are propagated with the same velocity provided the effects of lateral induction be the same — a striking analogy with one of the effects observed in the propagation of light and sound — (**Grove,** *op. cit.,* p. 171).

[2] As to its density, it *(æther)* must be far greater than that of any form of matter, millions of times denser than lead or platinum — (**Lodge,** *Continuity,* p. 33).

Audi *Cooke* difficultates, quæ ætherem comitantur, fatentem: « . . . I cannot agree with those who regard the wave-theory of light as an established principle of science. That it is a theory of the very highest value I freely admit, and that it has been able to

eo non minus quam in aliis corporibus, admittendæ sunt veræ condensatio et rarefactio, si absque actione in distans phænomena luminis etc. explicare volumus. Positis enim in æthere atomis discontinuis et rigidis, haben-

predict the phases of unknown phenomena, which experiment has subsequently brought to light, is a well-known fact. All this is true; but then, on the other side, *the theory requires a combination of qualities in the ether of space, which I find it difficult to believe are actually realized.* For instance, the rapidity with which wave-motion is transmitted depends, other things being equal, on the elasticity of the medium. Assuming that two media have the same density, their elasticities are proportional to the squares of the velocities with which a wave travels. The velocity of the sound-wave in air is about 1,100 feet a second or $^1/_5$ of a mile, that of the light-wave about 192,000 miles a second or about one million times greater; and, if we take into account certain causes, which though they tend to increase the velocity of sound, can have no effect on the luminiferous ether, the difference would be even greater than this.

« Now, were the density of the ether as great as that of the atmosphere (say, $^1/_3$ of a grain to the cubic inch), its elasticity or power of resisting pressure would be a million square, or a million million times that of the atmosphere. But the atmosphere can resist a pressure of about fifteen pounds to the square inch; hence the ether, when equally dense, would resist a pressure of fifteen million million pounds to the square inch... This pressure is about the weight of a cubic mile of granite rock... Here is a glass cylinder filled with air, and a piston that just fits it. The area of the piston is about a square inch. If we put a weight of fifteen pounds on the top of the piston it will descend just half way in the tube, and the air will be condensed to twice its normal density. Now, if we had a cylinder and piston, ether-tight, and, if we put on top of it a cubic mile of granite rock, it would only condense the ether to about the same density as that of the atmosphere at the surface of the earth. Of course the supposition is an absurdity, for it is assumed that the ether pervades the densest solids as readily as water does a sponge, and could not be confined; but the illustration will give an idea of the nature of the medium which the undulatory theory assumes. It is a medium so thin that the earth, moving in its orbit 1,100 miles a minute, suffers no perceptible retardation, and yet endowed with an elasticity in proportion to its density a million million times greater than air » (*op. cit.*, p. 14). Adhuc durius invehit *Stallo* (p. 113) in ætherem seu potius multiplicem ætherem physicorum. « *This endles superfetation* (inquit) *of æthereal media upon space and ordinary matter.* »

L'éther de Fresnel, celui de Maxwell (fluide inducteur), ou celui de Lord Kelvin, ont reçu dans ces derniers temps de vigoureux coups, en raison des propriétés contradictoires, au moins en appar-

tur vacua, per quæ lux propagari nequit. Si vero particulæ ætheris non sunt rigidæ, sed modo distendi modo comprimi possunt, motus undulatorius intelligi potest, *scil.*, per condensationes et rarefactiones alternantes in singulis ejus partibus entitativis (cf. *De San*, n. 294).

Ex dictis liquet omnino necesse esse, ad phænomena mundana salvanda et explicanda, admittere corpora condensari et rarefieri non solum apparenter sed et proprie. Quodsi talis mutatio voluminis est difficilis conceptu, id non rei veritati officit; revera enim imaginationi partes corporis ut immutabiles fingenti tribuenda est ista difficultas (cf. *De la Vaissière,* Phil. Nat., v. i. n. 72).

ART. II.

DE RELATIVIS CORPORUM PROPRIETATIBUS.

66. In hoc articulo oportet primo tractare de spatio et loco, tum quia intimam cum quantitate corporea habent connexionem, tum quia corporum compenetratio et multilocatio intelligi nequeunt nisi prius habeatur aliqua notio spatii et loci.

§ 1. De Spatio et Loco.

A. — De Spatio.

67. Communem de spatio notionem explorantes vix quemquam reperiemus, qui non censeat spatium esse quasi receptaculum quoddam ubicumque porrectum, quod corporibus impletur vel impleri potest. Unde, spatium definitur: *capacitas recipiendi et continendi corpora*, vel brevius: *capacitas extensionis*. Spatium itaque non est

ence, que comportait cette réalité hypothétique. Un grand nombre de partisans de la relativité le rejettent aujourd'hui, sinon comme inconcevable, du moins comme «encombrant et inutile». D'autres, il est vrai, non moins savants et non moins nombreux, le retiennent — **(Descoqs.** *Essai Critique,* p. 289).

« Scientia admisit, sub eodem ætheris vocabulo, media valde dissimilia, et ea multiplicavit in eodem spatio, pro sua theoretica utilitate: secundum Poincaré, admittuntur 5 ou 6 éthers, tous contradictoires entre eux » — **(Dario,** *Prælect. Cosm.,* p. 226).

extensio, *qua talis*, quia hæc concipitur ut id, quo spatium impletur. Nec est vacuum, *qua tale*, quia vacuum, secus ac spatium, si subintrat corpus, desinit. « Spatium et corporea extensio non eumdem plane conceptum exhibent » (ait **Schiffini**. *Cosm.*, p. 202). « Nam primo, extensionem in corpore ponimus, corpora contra in spatio. Rursus, extensionem corporum ut mobilem et impermeabilem, spatium, e converso, ut immobile quoddam et permeabile, concipimus. Tertio, spatium præcedit extensionem, ultra illam extenditur, eaque destructa, non propterea ipsum desinit : repræsentatur itaque quasi foret æternum, indefinitum et indestructibile».

68. Si prædicta capacitas in se sola consideratur, quatenus nempe præscindit ab hoc quod corporibus impleatur vel non, et concipitur ut aliquid undequaque diffusum sine limite, ut aliquid existens ante rerum creationem, atque extiturum etiamsi omnia destruerentur, dici solet spatium *(a) imaginarium*, quia nimirum est opus imaginationis quamdam illimitatam extensionem fingentis ; *(b) purum*, quia nihil habet actualitatis physicæ, nec ideo objective existit nisi in mente ; *(c) absolutum*, quia nullis determinatis limitibus designatur. Quodsi eadem capacitas consideratur ut corporibus occupata, dicitur spatium *reale* seu *physicum ;* quod et ipsum dicitur *partiale* vel *totale (mundanum)*, prout aliquo corpore vel toto complexu corporum occupatum cogitatur.[1]

Obs. A spatio, de quo agimus distingui debet spatium ***geometricum***, quod nihil aliud est quam notio extensionis in longum, latum et profundum, exclusa notione capacitatis recipiendi corpora.

69. In quo formaliter consistat spatium difficillimum est scitu, id quod diversitas hac de re sententiarum clare

[1] Real space began to exist simultaneously with the bodies it contains ; and it would disappear if these bodies ceased to exist. Real space is consequently « real extension carried to the utmost limits of the universe, combined with the function of receiving and holding bodies ». Similarly we may define absolute *(i. e.*, possible) space, as the extension of merely possible bodies with regard to their position — (**Pohle-Preuss**, *God : His Knowability*, p. 316).

manifestat.[1] Quæ tamen sententiæ ad quattuor classes reduci possunt. Prima classis est eorum, qui arbitrantur spatium esse realitatem a corporibus contentis omnino distinctam. Ex his alii (ut *Gassendi)* docuerunt spatium esse « rem quamdam æternam et improductam, quæ nec sit substantia nec accidens », sed medium inter utrumque. Alii (ut *Newton* et *Clarkius),* dixerunt spatium esse immensitatem divinam, quæ ubique existendo, spatium corporum constituat ; immo, Newton spatium *sensorium* Dei nuncupavit, in quo nimirum Deus omnibus præsens fiat, et omnia contueatur. Horum sententiam tenuisse videtur *Fenelon* (cf. *Balmes,* Fund. Phil , v. i., cc. 10, 11). Sunt qui putent *Lessium* eadem docuisse *(De div. perf.*, lib. 2, c. 2).

Critica. — Absurdum est ponere cum Gassendi spatium esse realitatem mediam inter substantiam et accidens, quum hæc complectantur omnem realitatem. Nec spatium dici potest Dei immensitas, quin vera Dei notio pervertatur ; nam, quum Dei immensitas non realiter differat a Dei essentia, in hac sententia ipsa essentia divina esset spatium.[2]

70. Secunda classis est eorum, qui contendunt spatium formaliter consistere in ipsa corporum extensione. Ita docuit imprimis *Cartesius,* qui essentiam corporis et spatii in extensione secundum tres dimensiones reponens, extensionem, substantiam corpoream et spatium, unum idemque esse censuit ; quum autem spatium quaquaversus sine fine diffusum concipiamus, extensionem et mundum

[1] « Nulla est sententia (de spatio), utut absurda videri queat, quæ insignes nacta non sit propugnatores » — (**Lahousse**, *Cosm.*, p. 264, ed. 2).

« Ingens est. . . copia disputationum de spatio, attamen ingens simul sententiarum diversitas atque etiam claritatis defectus » — (**Donat**, *Cosm.*, p. 52).

[2] If space is a property of God, it is God ; for, whatever is in God, is God. Therefore, as space is essentially extended, God too must be extended. . . It is also to be feared that this doctrine opens the door to pantheism. . . If we say that God is space or that space is a property of God, what hinders our saying that God is the world, or that the world is a property of God ? — (**Balmes**, *ib.*, pp. 384-385).

corporeum nullos habere limites conclusit (cf. *Balmes,* ib., p. 376-8). « Doctrina ista spatium in extensione reponens, omissis tamen vel rejectis ceteris, quæ Cartesius addebat, capitibus de infinitate mundanæ extensionis ac de ejus identitate cum corporis essentia, placuit quoque Jacobo Balmesio, op. cit., c. 12» (Urráburu, *Cosm.*, p. 920).

Critica. — Quæ mutuo exclusiva prædicata habent, nequeunt esse formaliter idem ; *atqui* spatium *continet* extensionem corpoream, hæc in illo *continetur ;* spatium est *implebile,* corpora ratione suæ extensionis *implent* spatium vel ejus partes ; spatium concipi potest ut *vacuum,* adveniente corpore tollitur vacuum et spatium fit *plenum.* Ergo spatium non consistit formaliter in extensione corporea.

71. Tertia classis est quorumdam neo-scholasticorum, qui spatium reponunt in relatione quadam extensioni superaddita, seu, in ordine partium extensionis inter se ; qui ordo fundatur in ipsa extensione, et immediate oritur ex distantia partium inter se *(Zigliara).*

Critica. — Ista relatio ex eo quidem, quod extensioni superadditur, præsupponit corpora jam in spatio collocata, spatium autem sive reale sive ideale, quid sit minime explicat. Præterea, spatium est æquale corpori locato, nemo vero diceret relationem esse corpori æqualem. Relatio debet habere subjectum in quo fundetur ; spatium vero non modo non potest habere subjectum, sed concipitur ut subjectum et fundamentum relationum inter partes distantes corporis. Quæri denique potest, num et quomodo spatium ad categoriam relationis pertineat, numque data spatii expositio illud revera distinguat a *positione* seu *situ interno* corporis (cf. *Schaaf.* Cosm., pp. 92 sqq.).

72. Quarta classis est eorum, qui docent **spatium formaliter sumptum non esse ens reale, sed ens rationis cum fundamento in re.**

Probatur hæc sententia. 1°. *Non est ens reale.* Nam *(a)* si spatium, corporum receptaculum, est ens reale, aut istud ens poscit aliud receptaculum, et tunc eundum erit

in infinitum ; aut non poscit, et tunc nulla ratio adduci potest, cur corpora tali receptaculo indigeant. *(b)* Quidquid reale est, aut substantia est aut accidens ; *atqui* spatium nec substantia est nec accidens : — *non substantia,* quia, utpote extensum, alio spatio egeret ut receptaculo ; *non accidens,* quia subjectum, in quo inesse debeat, assignari non potest.

2°. *Est ens rationis ;* nam spatium, « si ens reale non est, quale ens esse potest nisi *rationis,* quum inter hæc non sit medium ? » (Suarez, *Meta.,* D. 51, s. 1, n. 24).

3°. *Cum fundamento in re.* Etenim actualitas extensionis corporum sufficiens offert fundamentum ut, per modum receptaculi, concipiatur aliqua capacitas corporibus actualibus commensurabilis, et in potentia ad alia atque alia corpora sine fine recipienda. « Quatenus hoc spatium apprehenditur per modum entis positive distincti a corporibus, mihi videtur esse ens rationis, non tamen gratis fictum opere intellectus, sicut entia impossibilia, sed *sumpto fundamento ex ipsis corporibus,* quatenus sua extensione apta sunt constituere spatia realia, non solum quæ nunc sunt, sed in infinitum extra cælum » (Suarez. *ib.).*

Ergo extra mentem non est ulla res a corporibus distincta, quæ spatium vocari potest, sicut extra mentem non est ulla res, quæ est *genus* vel *species ;* sed quemadmodum universalia constituuntur a mente ope abstractionis a rebus individuis, quæ revera existunt ; ita spatium constituitur, quatenus mens dimensiones corporum in abstracto ab ipsis corporibus considerat tamquam eorum receptaculum. Unde, spatium existit a parte rei secundum id, quod concipitur, non vero secundum modum, quo concipitur, *i.e.,* ut quoddam receptaculum. Unde etiam, spatium *reale* et corpus, quo repletur, non sunt aliud et aliud nisi *ratione,* et proinde si extra mundum in spatio imaginario aliquod corpus poneretur, ipsa corporis præsentia spatium reale ibi constitueret.[1]

[1] Extension is always the extension of something ; but it is not the thing extended. Mentally we can separate extension from

B. — De Loco.

73. Explicata, quantum fieri potest, natura spatii, nunc de loco agendum est, qui juxta communem hominum notionem est aliquid corpus circumdans et includens. Optime igitur ab Aristotele definitur : *superficies prima et immobilis corporis aliud corpus continentis.*

Dictur 1°. superficies corporis *aliud continentis,* quia locus est verum continens respectu rei locatæ. Iam, ex una parte tale continens nequit esse aliquid ab omni corpore separatum, nec ex alia parte potest esse aliquid ad ipsum corpus locatum pertinens (*v.g.*, ejus materia, forma, dimensiones), quia corpus se movendo locum amittit et acquirit, quin quidpiam suiipsius amittat vel acquirat. Restat igitur, ut locus corporis constituatur per aliquid (*i.e.*, terminum seu superficiem) alterius corporis.

Dicitur 2°. *superficies* prima, *i.e.*, superficies *immediate* circumdans corpus locatum ; secus enim locus a corpore locato distaret. Duplex in hoc contextu distinguenda est superficies, et proinde duplex locus respectu corporis locati, *scil.*, superficies *prima,* quæ corpus immediate includit ejusque locum *proprium* determinat ; et superficies *remota,* quæ corpus includit quidem, sed non tangit. Hæc altera constituit locum *communem,* quia plura corpora, quorum quodque locum proprium habet, continere potest. Hic observa *(a)* nomen loci nonnisi per accidens loco communi competere, quatenus nimirum ipse continet corpus (vel corpora), cujus termini constituunt proprium alterius locum ; *(b)* locum communem majorem esse locato, locum proprium eo nec majorem esse nec minorem.

Dicitur 3°. *superficies* immobilis, quia locus concipitur ut aliquid fixum et permanens relate ad rem locatam, quæ

the substances from which we distinguish it ; and it is extension thus separated, conceived apart, which constitutes the space or the universe. Space is therefore as real, as objective, as the corporeal world itself, but in itself it exists apart only in the human mind, seeing that in the reality of existing things it is only the extension of bodies themselves — (**Munnynch**, *Cath. Encyclopedia*, v. xiv., p. 167).

illuc accedere vel illinc recedere potest ; nemo autem diceret locum accedere vel recedere. Hæc immobilitas, quæ superficiei corporis continentis tribuitur, est vel *physica,* si superficies reipsa permanet, ut, *v.g.,* terra circa lapidem ; vel *moralis,* si in hominum existimatione eadem superficies manet, quatenus pro una transeunte, alia penitus æquivalens succedit, ut aqua circa navem.[1]

Obs. Illud, quo corpus constituitur in uno et non in alio loco, dicitur ejus ***ubi*** seu ***ubicatio.*** In quo vero ubicatio consistat non conveniunt auctores. Alii eam ponunt in relatione corporis ad corpora circumstantia. *Atvero,* corporibus circumstantibus destructis, non ideo illud corpus desinit habere ***ubi*** quod prius habuit. Juxta alios ***ubi*** est modus corpori superadditus ; quia corpus sine ulla in sua substantia mutatione hanc vel illam ubicationem seu modum se habendi acquirit vel amittit (cf. *Monaco,* Cosm., qui priorem sententiam tenet, vel *Urráburu,* Ont., qui alteram, necnon, *O'Neill* Cosm., p. 247).

74. Locus hic descriptus a quibusdam dicitur *extrinsecus,* ad eum distinguendum a loco *intrinseco,* ut ipsi volunt. Locus intrinsecus, inquiunt, est illa pars spatii, cui corpus respondet, vel, superficies extrema ipsius corporis locati. At minus placet distinctio, tum quia spatium non est locus, tum quia corpus dici nequit in sua superficie locatum ; aliud enim est locus, aliud ipsum esse rei, quæ est in loco. Tamen ad quæstionem num mundus corporeus sit in loco necne, varie respondendum est, prout

[1] The ***place*** of a body immersed in water is the immediate water surface which touches it all round, and which is considered, for convenience sake, as unchangeable. A fossil immovably imbedded in a rock, if it were suddenly annihilated, would leave a perfect definition of its place ; while a body on the very confines of creation for want of a containing superficies, would have no real place on that side by which it was turned towards vacant space... We may repeat the doctrine about place in the words of Cardinal Zigliara *(Ont.,* lib. 3, c. 4) : « Place is conceived as a bounding object, the outer surface of which shuts in, as it were, the room which the thing located has occupied ; and though this outer surface really changes, yet equivalently and is so far as the circumscribed limits are the same, it remains identical. Hence we say that a man standing in a strean abides in the same place in spite of the constant flow of water which surrounds him » — (**Rickaby**, *Gen. Meta.,* p. 368).

admittitur locus intrinsecus vel non. Si non admittitur, negative respondendum est; secus vero, si admittitur.[1]

75. **De præsentia locali.** – Quum ens aliquod dicitur esse in loco, duo significantur: *(a)* ens esse intra superficiem corporis ambientis, *(b)* ens cum loco uniri. Hæc autem unio est alia in corporibus, alia in spiritibus. Nam in corporibus hæc unio habetur, quatenus superficies corporis locati unitur *contactu quantitativo* cum superficie corporis ambientis. Unio spiritus cum loco habetur, quatenus spiritus suam potest activitatem exercere intra quosdam limites et non ultra. Talis unio dicitur *contactus virtutis*.[2]

76. Ex dictis sequitur duplicem præsentiam localem distingui posse, scil., *circumscriptivam* et *definitivam*.

Præsentia *circumscriptiva* obtinet, quando res totum occupat locum, sed ita, ut partes loci occupet per partes sui. Hæc præsentia dicitur etiam *quantitativa*, et solis corporibus convenit.

Præsentia *definitiva* obtinet, quando res secundum to-

[1] A single body existing alone, if we may use such a supposition, would have no real place at all in the Aristotelian sense. Later writers have added, that it would have no extrinsic place, no place marked by an *extrinsic* superficies, but would have an *intrinsic* place marked by its own superficies — (**Rickaby**, *ib.*).

[2] An angel has thus much in common with a body, that he neither is nor can be everywhere at once; that he is capable of being substantially and immediately present now in one place, now in another; and that, as a consequence, his presence is limited. But his ubication differs in every other particular from that of a body. An angel is present in space by virtue of his substantial nature; a body is present in virtue of its quantity. In the instance of the former, *place is predetermined by the body that is subject of his action, and is only predicable of him in connection with such body*; in the instance of the latter, place is a proper measure connoting quantitative dimensions. The former wholly occupies each point in the contained space, as completely as he occupies the whole; the latter occupies it by parts, so that one part of the body is where another is not, and the place of the body is the sum of the places of its several parts. Hence the presence of an angel is *defined* by place; the presence of a body is *circumscribed* by place — (**Harper**, v. iii., p. 240; cf. *Lépicier*, The Unseen World, pp. 63-64).

tam suam entitatem est in toto aliquo loco et in singulis ejusdem partibus.

Si res *definitive* præsens ita, natura sua, alligatur ad suum locum, ut extra illius limites esse non possit, præsentia *stricte definitiva* habetur *(v.g.,* præsentia animæ in corpore, angeli intra ambitum suæ activitatis), quæ distinguitur a præsentia definitiva, quam theologi *sacramentalem* vocant. Hæc præsentia consistit in speciali modo, quo Christus est in speciebus sacris, scilicet, totum ejus corpus est in tota hostia, et totum in singulis partibus, quin definiatur ad unam hostiam vel altare.[1]

77. Singula corpora, ut experientia constat, tali modo suum proprium occupant locum, ut unumquodque a loco, quem tenet, cetera excludat. Item, numquam accidit, attentis naturæ legibus, ut corpus simul adsit diversis locis secundum suam entitatem. Quæri autem potest *(a)* utrum plura corpora in loco vere eodem simul inesse possint; *(b)* utrum idem corpus possit simul occupare diversa loca. Quoniam vero ex quibusdam mysteriis Fidei

[1] « Voces circumscriptivi et definitivi specialem attentionem merentur. *Circumscriptive* ex etymo vocis in aliqua re id esse dicitur, quod in ea sic recipitur, ut secundum contactum cum recipiente undique finiatur... At quia corporum potissima proprietas, qua a spiritibus differunt, est, ut aliæ partes corporis aliis partibus spatii respondeant, nomen circumscriptivi translatum est ut non amplius significet contactum corporis ambientis, sed proprietatem, qua corpus in spatio est modo formaliter extenso. *Definitive* ex etymo vocis alicubi id esse dicitur, quod ita ibi est, ut non sit alibi, sed ad hunc unum locum definiatur. Omnis igitur creatura est definitive in loco, quia naturaliter nihil est in pluribus locis dissitis; solus Deus non est definitive in loco, quia ubique est... Sed corpora sunt in loco definitive et circumscriptive, spiritus creatus definitive tantum. Usu loquendi factum est, ut definitivum esset idem, quod definitivum tantum. Sic definitivum opponitur circumscriptivo. Definitive igitur est alicubi, quod non est ibi modo formaliter extenso. Quum autem definitivum etiam immensitati Dei opponatur, *definitive alicubi est quod ibi est neque modo formaliter extenso neque modo absolute simplici, sed modo virtualiter extenso.* Voces igitur *circumscriptivi* et *definitivi* primam significationem omnino mutaverunt. V.g., totus mundus *circumscriptive* est in loco, quamquam a corpore ambiente non circumscribitur: Christus in SS. Eucharistia *definitive* est, quamquam simul est pluribus locis » — (**Hontheim**, *Theodicæa,* p. 563).

(*v.g.*, egressu Domini e sepulcro saxum penetrando, et introitu in cenaculum, januis clausis ; necnon ex ejus præsentia in cælo et in Eucharistia) utrumque manifeste comprobatur, et aliunde utrumque est naturaliter impossibile ; expendendum est, quo fiat, ut veritates Fidei jam indicatæ minime refragentur iis, quæ recta ratio docet de corporum natura et quantitate. Ad hanc igitur duplicem quæstionem solvendam sint sequentes theses.

§ 2. De Corporum Compenetratione.

78. THESIS X. — Circumscriptiva compenetratio corporum nullam importat repugnantiam.

Stat. Quæst. — Compenetratio definitur : *simultanea occupatio ejusdem loci proprii pluribus corporibus.*

Dicitur *loci proprii,* quia compenetratio stricte dicta obtinet, quando corpora in loco prorsus eodem constituuntur. Unde, ingressus, *v.g.*, aquæ vel aeris in poros alterius corporis non est compenetratio. Compenetrationi opponitur impenetrabilitas.

79. Obs. In quo consistat impenetrabilitas, controvertitur inter auctores. Quidam (ut *Pesch,* Phil. Nat., v. ii.. p. 151 ; *Van der Aa,* Cosm., p. 107 ; et physicistæ[1]) eam in *aliqua vi resistendi* reponunt ; ideoque non-penetrationem corporum censent esse effectum alicujus actionis resistivæ. Plures alii (v.g., *Lahousse, Haan, Schiffini, Urraburu,* præeuntibus *S. Thoma* et *Suarez,* cf. *O'Neill,* Cosm., v. i., p. 192) non-penetrationem explicant, non per *actionem* seu causalitatem *efficientem,* sed per causalitatem *formalem.* Sicut diversæ formæ, inquiunt, non possunt simul inesse eidem subjecto, ita dimensiones diversæ, quæ se habent tamquam formæ respectu locorum, non possunt simul commensurari eidem loco. Hæc altera opinio magis placet. Nam corpora impenetrabilia sunt ratione quantitatis ; quantitas vero non est *activa,* sed *passiva.*[2] Præterea, quum partes, etiam minimæ, sint impenetrabiles,

[1] En général, les hommes de science font consister la cause de l'impénétrabilité dans la force de résistance — (**Nys.** *op. cit.*, v. ii, p. 155).

[2] L'impénétrabilité se rattache par des liens étroits à la quantité dimensive, ou plus exactement, il existe entre elles une simple distinction de raison ; d'elles-mêmes, et sans ajouter d'aucun genre, les parties de la quantité possèdent une aptitude interne et exclusive à une étendue propre — (**Nys.** *ib.* 157).

omnis pars corporis deberet (admissa priori sententia) in partes vicinas agere, eisque obsistere; id quod non posset fieri nisi, continuitate ablata, partes existerent ab invicem separatæ. Denique, ***vis resistendi,*** utpote activa et a forma emergens, est, sicut ipsa forma, diversa in diversis corporum speciebus, ac superabilis ab agentibus vi superiori præditis; impenetrabilitas autem non est diversa in diversis (unum corpus nec magis nec minus impenetrabile est quam aliud) nec est superabilis virtute ullius agentis physici. Qui hanc sententiam tuentur, vim resistendi inesse corporibus profecto agnoscunt, non quidem ut rationem ontologicam impenetrabilitatis, sed ut ejusdem proprietatem. Nimirum, corpus *active* resistit, non ad impediendam compenetrationem, sed *quia est impenetrabile* resistit, ne a loco suo expellatur[1]. Impenetrabilitas igitur est *incapacitas quantitatis ad recipiendam intra eosdem loci terminos quantitatem alterius corporis*. Dicitur incapacitas *quantitatis*, tum quia ratione quantitatis impenetrabilitas corporibus convenit, tum quia inveniri potest, ubi quantitati non subest congrua substantia corporea, v.g., quantitas in sacris speciebus altaris est cum alia quantitate impenetrabilis.

Triplex recensetur compenetratio: *(a) circumscriptiva,* si corpora compenetrata suam retinent quantitatem externam; *(b) definitiva,* si quantitas externa corporum impeditur; *(c) mixta,* si alterum corpus retinet, alterum (vel altera) amittit quantitatem.

80. **Prob. Thesis. Arg.** Repugnantia compenetrationis circumscriptivæ, si adesset, oriretur vel *(a)* quia entitas corporum compenetratorum confunderetur, vel *(b)* quia dimensiones corporum non distinguerentur, vel *(c)* quia vis resistendi (in sententia allata n. 79) non posset impediri. Jamvero,

(a) Corpora formaliter distinguuntur ab invicem, non ratione situs, sed ratione suiipsorum; ergo ex plurium corporum constitutione in loco omnino eodem minime sequeretur eorum entitatum confusio.

(b) Duplici modo dimensiones unius corporis a dimen-

[1] Ce n'est pas que nous méconnaissions les forces de résistance dont la matière se montre universellement douée. Nous les croyons même indispensables au maintien de l'ordre cosmique. . . . Mais autant leur concours est précieux pour assurer aux corps une stabilité relative et en empêcher les déplacements trop faciles, autant il est impuissant à rendre compte de leur impénétrabilité naturelle — **(Nys, *ib.*,** p. 158).

sionibus alterius distinguuntur: *ratione positionis,* quam habent; *ratione subjecti,* in quo insunt; *atqui,* posita compenetratione, desinit quidem diversitas dimensionum quoad *positionem,* haud vero quoad *subjectum.* Nam, quum distinctio corporum compenetratorum non pereat, ut non pereat eorum dimensionum distinctio necesse est.[1]

(c) Vis resistendi, sicut omnis alia vis, ut suam activitatem exerceat, eget concursu divino, quem si Deus denegat, vis resistendi nullum effectum habere potest, et hinc (in hac sententia) nullum obstaculum ad mutuam corporum compenetrationem habetur.

81. **Cor.** Ergo compenetratio *mixta* (et a fortiori *definitiva)* non repugnat; tota enim difficultas, quæ in compenetratione cernitur, oritur ex parte dimensionum corporum. Quæ difficultas prorsus evanescit, quando alterutrum corporum quantitate externa exuitur. Talis est compenetratio Corporis et Sanguinis Christi cum quantitate circumscriptiva panis et vini in Eucharistia.

82. **Schol.** In compenetratione circumscriptiva corpora se habent, tum in agendo in alia corpora, tum in patiendo ab ipsis, ac si non essent compenetrata. In compenetratione mixta, corpus, quod quantitate externa caret, nec agere potest in alia corpora nec potest eorum actionibus affici. Unde, si tale corpus sit sensibus præditum, in eo nequeunt, saltem naturaliter, excitari sensationes. Utrum possint supernaturaliter, controvertitur. Plures negant. Affirmant *S. Bonaventura, Suarez, Lessius, Franzelin* (De Euch., p. 178). et alii apud *Dalgairns* (Holy Comm., Part 2, c. 2).

§ 3. De Corporum Multilocatione.

83. **THESIS XI.** — **Nulla repugnantia elucet in eo, quod idem corpus simul insit pluribus locis adæquatis.**

Stat. Quæst. — *Multilocatio (replicatio, bilocatio)* est *si-*

[1] «Supposita distinctione subjecti sine distinctione situs ex divino miraculo, intelligentur diversæ lineæ, quæ non distant situ, propter diversitatem subjecti, et similiter puncta diversa» — (**S. Th.,** 4 ***Dist.,*** 44, q. 2, a. 2).

multanea præsentia ejusdem corporis (vel *rei) in pluribus locis adæquatis*. Per *loca adæquata* intelliguntur ea, quæ singillatim ad corpus continendum naturaliter sufficiunt. « Corpus enim secundum diversas suas partes est in diversis locis partialibus, sed non idcirco multilocatum existimatur; quia omnia illa loca partialia locum ipsi continendo idoneum efficiunt. Nec replicari dicitur anima, eo quod sit tota in loco capitis, ac tota in locis pedum; quia loca hæc singularum partium unum locum totalem totius corporis humani constituunt. Et ex opposita ratione Deus non replicatur eo, quod omnibus locis sit præsens, hoc ipso quod nullus est locus finitus, quantumvis amplus, qui sit ipsi proportionatus, ipsumque contineat» (**Tongiorgi**, *Cosm.*, p. 370).

Multilocatio est *circumscriptiva, definitiva, mixta,* prout corpus est pluribus locis præsens *circumscriptive, definitive,* vel in alio loco *circumscriptive,* in alio (vel aliis) *definitive*. Realitatem multilocationis definitivæ et mixtæ Fide edocemur; nam Christus modum præsentiæ definitivum sub sacris speciebus habet, simulque existit circumscriptive in cælo.

Thesis eo spectat, ut demonstretur multilocationem non esse per se rationi repugnantem. De possibilitate multilocationis circumscriptivæ vide n. 86.

84. **Prob. Thesis. Arg.** — Absoluta multilocationis impossibilitas, si daretur, vel *(a)* ex eo proveniret, quod corpus multilocatum multiplicaretur seu plura evaderet; vel *(b)* ex eo, quod de tali corpore verificarentur prædicata contradictoria; *atqui* neutrum ostendi potest. — *Non primum,* quia, data multilocatione, multiplicatur quidem corporis præsentia ejusque relatio ad alia corpora; præsentia vero et relatio corporis non efficiunt ejus unitatem, quæ desumitur ab entitate corporis, non ab unitate loci; id quod confirmatur ex modo præsentiæ spiritus, qui est totus in singulis suæ sphæræ partibus, et nihilominus suam unitatem servat. — *Non alterum,* quia de corpore multilocato non eadem de eodem sub eadem ratione affirmantur et negantur, sed diversa de eodem sub diversa

ratione. Sic, *v.g.*, alia vera sunt de corpore Christi in cælo, alia de eodem ut est in Sacramento; aliæ relationes ei competunt ut est in hoc tabernaculo; aliæ vero ut est in aliis.

Dices: esse præsens uni loco perinde est ac non esse præsens alteri. *Resp.* Id verum est, ratione habita ordinarii cursus naturæ, falsum vero, ratione habita ipsorum conceptuum loci et præsentiæ; præsentia enim rei in uno loco per se non importat, sive ut notam constitutivam sive ut proprietatem, negationem præsentiæ in alio loco; hæc itaque negatio accidentaliter dumtaxat præsentiam rei comitatur, et proinde nulla notarum repugnantia reperitur in multiplici ejusdem corporis præsentia.[1]

85. Cor. 1. «Ergo duplex fieri potest replicatio: *discreta* et *continua*. Potest enim corpus totum simul in locis omnino dissitis esse et potest esse in singulis partibus unius continui. Ita sacrum Christi corpus per multilocationem discretam existit in omnibus hostiis consecratis, per multilocationem vero continuam in quavis particula cujusvis hostiæ».

Cor 2. «Ergo multilocato corpore non simul multilocatur determinata illa ubicatio, qua in priore loco constituitur. Hæc enim essentialiter per se ipsam est in loco,

[1] It is true, that if it could be proved by irresistible arguments involving a metaphisical necessity, that the essence of a body consists in extension, or the filling a determinate space, — in that case as truth can never be opposed to truth, it would follow as a necessary consequence, that even by Divine power, one body could no more be in many places simultaneously, than the diagonal can be commensurable with the side of a square. And if this were ascertained, it would, unquestionably, be necessary to recur to an allegorical interpretation of the Divine word *(circa Eucharistiam)*, whether written or traditionary. But so far is it from being true that any of the philosophers has perfected this vaunted demonstration, that on the contrary, it rather appears capable of solid proof, that, though the nature of a body requires that it should be extended, unless an obstacle to its extension be interposed by God, nevertheless the essence of a body consists in matter and substantial form; and though it is true that the natural order of things requires these to be defined by a place of determinate magnitude, yet there is no absolute necessity which requires it — (**Leibnitz**, ***System of Theology,*** trans. by C. W. Russell, p. 99).

immo est ipsum 'esse in loco.' Esse hic et esse alibi sunt effectus formales oppositi et incompatibiles; repugnat autem unum contrarium recipere effectum formalem contrarii» (**Pesch,** *Phil. Nat.*, v. ii., p. 155).

86. Schol. Multilocatio circumcriptiva. Hanc multilocationem esse absolute impossibilem explicite docuit *S. Thomas* et post eum plures alii. Idem inter recentes sentiunt *De Maria* (Cosm., p. 100), et *Monaco,* (Cosm., p. 279).

Qui hanc sententiam acceptant, eam hac ratione, ut plurimum, probare conantur: «Aliquod corpus esse localiter in aliquo loco, nihil est aliud quam corpus circumscribi et comprehendi a loco secundum commensurationem propriarum dimensionum. Quod autem comprehenditur a loco aliquo ita est in ipso loco, quod nihil ejus est extra locum illum; unde ponere quod sit localiter in hoc loco, et tamen sit in alio loco, est ponere contradictoria esse simul» — **S. (Th.**, *Quodlib.*, 3, a 2).

Nec huic sententiæ obstare autumant 'bilocationes' sanctorum: hæ enim, inquiunt, aliter explicari possunt. «1°. ut in altero locorum viderentur (sancti) visione quadam phantastica causata ab angelis per motum phantasticum, sicut contingit in somniis. 2°. ut in altero locorum videretur visione reali corpus aereum formatum ab angelis et simile corpori reali illius sancti. 3°. ut miraculose species visibiles hominis distantis pervenerint ad oculos distantes, ita ut per illas viderent illum hominem distantem tamquam præsentem, sicut aliquando per telescopium distantissima objecta apparent ut propinqua» — (**Maurus,** *Qu. Phil.*, v. ii., q. 28, ad 4).

87. Possibilitatem multilocationis circumscriptivæ defendunt spectatissimi theologi et philosophi (cf. *Urráburu,* Cosm., p. 980; *Pesch,* v. ii., p. 157), eamque reputant corollarium doctrinæ catholicæ de multilocatione mixta et definitiva. «Est enim (inquit **Suarez**) hæc non solum aptior ad respondendum hæreticis et veritatem catholicam tuendam, sed etiam judicio meo tam necessario tamque evidenter consequens illam, ut mirabile mihi semper visum fuerit contrariam sententiam gravissimis theologis persuaderi potuisse» — *(De Euch., Disp.* 48, s. 4, n. 5). «Unde, profecto mirum est, fuisse theologos catholicos non paucos et graves, qui concessa utique possibilitate existentiæ unius corporis in multis locis modo inextenso, quæ in ipso dogmate de reali præsentia Christi in Eucharistia includitur, affirmabant tamen absolute repugnare replicationem corporis in pluribus locis secundum modum existendi extensum et quantitativum» (**Franzelin**, *De SS. Euch.*, p. 173).

Et revera, eædem rationes, quæ valent pro multilocatione definitiva vel mixta, æque, immo magis, pro circumscriptiva valere videntur, quum illa duo postulet miracula, hæc vero unum. Nam

ut corpus sit in loco ad instar spiritus plus ejus naturæ repugnat, quam ibi esse modo extenso. Nec dici potest repugnantiam esse *ex parte extensionis;* nam corpus alicubi definitive existens, ibi habet suam extensionem in actu primo; haud vero apparet quid intrinsecus obstet, quominus extensio in actu primo transeat in actum secundum. Sic, *v.g.,* in Sacramento altaris « vis illa et exigentia naturalis adest, qua fit, ut nisi Deus miraculose intercedat, corpus suam naturalem figuram per spatium extensam habeat » — (**Chr. Pesch.**, *Dogm.*, v. vi., n. 741). Desinente igitur miraculo. Christus esset simul in cælo et terra circumscriptive.

Dices: Corpus esse circumscriptive in loco perinde est ac ita comprehendi a loco illo, ut nihil ejus sit extra. *Resp.* 1°. Exinde sequeretur corpus in uno loco circumscriptive non posse esse alibi definitive; quod enim est in loco circumscriptive, in alio autem definitive, est extra locum, ubi est circumscriptive. *Resp.* 2°. corpus esse circumscriptive in loco perinde est ***physice*** ac ita comprehendi. . . *conc.;* . . . perinde est *metaphysice, neg.* Hæc altera enim est ipsa quæstio solvenda.

Ut in hac quæstione conclusiones plus minusve absonæ præcaveantur, præ oculis habenda sunt hæc duo principia: « *(a)* Replicatio est vera multiplicatio *habitudinis ad locum et relationum ad spatium.* Unde, hæc habitudo et hæ relationes eaque omnia, quæ ab habitudine ad locum et spatium pendent, ***revera se habent ac si multa essent corpora.*** Contra vero *(b),* quia res manet una numero, etiam *una manet et non multiplicata omnis perfectio independens a relationibus ad locum et spatium.* Sicut igitur eadem numero res, quæ est in uno loco, est etiam in altero, ita pariter omnis perfectio independens a relatione ad locum, quæ inest rei replicatæ in uno loco, eadem numero inest in aliis locis omnibus. Omnes fere difficultates reales ex neglecta consideratione duplicis hujus principii oriuntur » (**Franzelin,** *loc. cit.,* p. 174).

ART. III.

DE CORPORUM MOTU ET ACTIVITATE.

In articulis præcedentibus egimus de proprietatibus, quæ corporibus competunt ratione materiæ; modo autem agendum est de proprietatibus, quæ eisdem conveniunt ratione formæ, quæque *activæ* dicuntur. Quum vero omnis activitas corporea per motum, et quidem localem, peragatur, oportet primo de *motu,* deinde speciatim de corporum activitate tractare.

§ 1. De Motu.

88. Vox *motus* triplicem admittit sensum apud philosophos.[1]

1°. Sumitur sensu latissimo ad quamlibet operationem, sive transeuntem sive immanentem, designandam. Quo sensu nec mutationem nec potentialitatem per se importat. *V.g.,* Deus seipsum *movet* (i.e., *vivit).*

2°. Sensu minus lato accipitur ad significandam mutationem sive successivam sive instantaneam (*Ont.*, n. 108).

3°. Sensu stricto ac proprio idem est ac *mutatio successiva,* et ab *Aristotele* definitur: *actus entis in potentia, quatenus est in potentia.*

Dicitur 1°. *actus,* quia per motum res, prius in potentia ad aliquem finem, formaliter constituitur in ratione rei hic et nunc motæ in ordine ad illum finem; id autem, quo aliquid prius existens in potentia, actu determinatur, est *actus.*

Dicitur 2°. *entis* **in potentia**, quia motus, quatenus determinat mobile, est quidem ejusdem actus, at non est ejus actus perfectus, sed manet *in potentia* ad talem actum seu statum.[2]

Dicitur 3°. **quatenus** *est in potentia,* quia «si tolleretur ordo ad ulteriorem actum, ipse actus, quantumvis imperfectus, esset terminus, et non motus; sicut accidit cum

[1] In the halcyon days of scholasticism, motion was, for every thinker in Europe, the synonym of several distinct kinds of material change: since the time of Descartes, that ancient richness of content has dwindled away, and nowadays, outside the scholastic school, the sole connotation of motion both in philosophy and in natural science is the meagre, if all important, one of local movement. The old meaning is essential, however, to an intelligent grasp of medieval philosophy — **(O'Neill,** *Cosm.,* v. i., p. 240).

[2] Entre la simple aptitude au mouvement, pure puissance d'une part, et l'acte complet qui suppose l'aptitude satisfaite, la puissance réalisée d'autre part, il y a une réalité intermédiaire composée d'acte et de puissance, c'est le mouvement: elle est ***acte,*** et, sous ce rapport, présuppose une puissance en partie réalisée; mais elle est encore ***puissance,*** car le sujet, en partie actualisé, demeure susceptible d'un acte ultérieur; l'acte d'un être en puissance 'actus imperfecti' — **(Mercier,** *Ont.,* p, 393, 4ième éd.).

aliquid semiplene calefit. Ordo autem ad ulteriorem actum competit existenti in potentia ad ipsum» (S. Th., 3. *Phys.*, lect. 2; cf. *O'Neill*, op. cit., p. 243).

89. **Consectaria.** 1. *Motus distinguitur realiter a termino* **a quo** *et a termino* **ad quem**. Terminus *a quo* est ens mobile respectu alicujus status vel perfectionis; hic autem terminus ipsi motui præsupponitur. Terminus *ad quem* est perfectio ope motus consecuta, quæ quidem perseverat, motu cessante. Hæc distinctio realis non est *major* sed *minor* seu *modalis (Ont.*, n. 287), quia motus est mera rei mobilis determinatio (cf. *Pesch.*, Phil. Nat., v. ii. p. 83; *Urráburu*, Cosm., p. 1021).

2. *Motus, ex natura sua, est ens successivum*, seu, *in fieri consistit*. Ens successivum in hoc differt a serie entium sibi succedentium, quod talis series constare potest entibus permanentibus et discretis, licet alterum alteri succedat; ens autem successivum est ens vere unum, cujus entitas talis est, ut, dum una pars designabilis existit, altera nondum sit, et dum hæc altera existit, illa non sit amplius. Hujusmodi esse motum experientia testatur.

3. *Motus est essentialiter ens continuum*; interruptio enim motus est motus desitio.[1] Porro, ens continuum est illud, cujus partes, aliæ cum aliis, conjunguntur; in eodem autem motu impossibile est designare duos terminos, inter quos motus non mediat, sicut inter duo puncta ejusdem lineæ linea necessario jacet.

4. *Motus specificatur a suo termino* **ad quem**. Nam quovis motu aliquid de novo accedit ad rem motam; quo accedente, res tamquam per formam ulterius determinatur et in certa quadam specie constituitur. Quod autem accedit, dicitur terminus *ad quem*, quoniam per ipsum terminatur motus. «Mutationes (inquit **S. Thomas**) acci-

[1] Motion was the name given by the schoolmen to every continuous process in matter which tends to pass beyond itself into something else: this process has a starting point whence motion begins and a finishing point where motion ends; there is no motion at the starting-point, there is no motion at the finishing-point, all the motion lies in the unbroken process that links the one with the other — (**O'Neill**, p. 244).

piunt speciem et dignitatem, non a termino *a quo* sed a termino *ad quem*» (1, q. 45, a. 1).

90. Jamvero, triplex datur terminus, ad quem res moveri potest; ergo et triplex est species motus: — *(a)* motus *ad quantitatem* seu motus augmenti vel decrementi; *(b)* motus ad *qualitatem* seu motus alterationis secundum intensionem et remissionem; *(c)* motus *ad locum,* quo scilicet corpus ab uno loco in alium successive tendit.[1]

Motus localis ceteris motus speciebus præcedit; «non enim *augmentatur* aliquid nisi præexistente alteratione, per quam, quod prius erat dissimile, convertatur et fiat simile (ut in nutritione). Neque *alteratio* potest esse nisi præexistente loci mutatione; quia ad hoc quod fiat alteratio, oportet quod alterans magis sit propinquum alterato nunc quam prius» (S. Th., *Contra Gent.,* lib. 3, c. 82).

91. Quid sit causa efficiens motus localis. Quæstio agitata non est de causa remota et transeunte, unde motus originem sumit, sed de causa *proxima* et *permanente,* ex qua immediate sequitur motus, quæque perdurat, cessante omni motoris actione, ut quum lapis projicitur. Hæc causa proxima motus est juxta scholasticos *nisus* seu *impetus* ab agente externo productus.[2] «Quodsi ani-

[1] Trop familiarisés avec la conception mécanique de l'univers, nous sommes tous tentés d'identifier le terme générique de *mouvement* avec celui de *mouvement local*. L'École lui attribuait cependant une acceptation beaucoup plus large. Elle distinguait, d'après la nature du terme réalisé par le changement, trois espèces de mouvements successifs et continus : le lieu, la quantité et la qualité sont trois réalités distinctes qui se modifient, au même titre, d'une manière graduée et ininterrompue. De là, les trois espèces de mouvement : le mouvement *local*, le mouvement *quantitatif* d'accroissement ou de décroissement, et le mouvement *altératif* ou *qualitatif* — (Nys, *Cosm.*, v. i., p. 201).

[2] The medieval history of this quality *(impetus)* is an interesting illustration of the desertion of Aristotle, St. Thomas, and Scotus, by most of the School. St. Thomas in his Commentary on Aristotle's *Physics* follows the Stagyrite in teaching explicitly that missiles owe their flight to motion and motion alone — a motion caused first in the surrounding air (or water) and, through this in the missile: and he refutes painstakingly the opposing theory of the production within the missile of any motive quality or impulse. The Commentary of Scotus on Aristotle's *Physics* is lost, but his disciples attri-

mum subeat cogitatio, quid sit ille impetus, certum est *(a)* eum formaliter non idem esse atque ipsum motum localem; motus enim localis passivum quid est et pura modificatio rei motæ, unde virtute productiva caret. Certum est *(b)* impetum non semper esse externum quiddam, nam lapis manu projectus etiam postquam projectus est, motus sui causam habet omniaque sua secum portat. Unde *impetum* vel *impulsum dicendum est esse excitationem qualitatis cujusdam ad motum producendum ordinatæ subjecto inhærentis,* vel *potentiam quamdam activam ipsius corporis moti actuatam extrinsecus certo gradu.* Itaque in corpore aliquo projecto quod, ni impediretur, in indefinitum pergeret, tria consideranda occurrunt: *(a)* ipsum corpus quod statum sive natura insitum sive inditum ab alio conservat; *(b)* potentia, qua illum conservat, *actuata; (c)* ipsum moveri, quod illorum est effectus» (**Pesch**, *Phil. Nat.*, v. ii., p. 85; cf. *Van der Aa,* p. 49, *Urráburu,* p. 1072, *Nys,* v. i., p. 117, *De La Vaissière* v. i., pp. 52-54). Pro gradu hujus potentiæ excitato, eo velocior est motus et efficacior est actio corporis moti.

92. Physici duplicem motum localem recensent, *scil., moralem,* quo totum corpus alio tendit, et *molecularem,* quo corporis moleculæ quodam tremore agitantur.

§ 2. De Corporum Activitate.

93. THESIS XII. — Activitates corporum non sunt revocandæ ad motum localem: speciatim negandum est sensibilia propria consistere in motu locali.

Stat. Quæst. Experientia quotidiana nos edocet corpora, positis quibusdam conditionibus, certa phænomena exhibere, quæ ipsis corporibus tamquam veris ipsorum causis tribuimus. Nec corpora veram causalitatem exercere potest quis dubitare, quin in errorem *occasionalismi*

bute to him, on this topic, a view similar to that of Aristotle and of St. Thomas. Most of the disciples of St. Thomas and of Scotus adopt the opposing theory, and postulate this internal quality as an explanation of the free flight of stones, spears, arrows, and cannon-balls — (**O'Neill,** *Cosm.* p. 225).

impingat. Quum autem quæritur, qualis sit activitas, quæ corporibus adscribenda est, oportet sedulo distinguere inter theorias modernas et doctrinam a scholasticis traditam. Physici enim moderni omnem activitatem corpoream ad motum localem reducunt, et omnia phænomena sensibilia non aliud esse existimant quam species vel modos motus localis.[1]

94. Ratio hujus doctrinæ in eo esse videtur, quod phenomena lucis, caloris, electricitatis, etc., semper sunt cum

[1] Modern physical science aims at a ***mechanical*** interpretation of all the phenomena of the universe. It seeks to explain these phenomena by reducing them to the elements of mass and motion, and exhibiting their diversities and changes as merely differences and variations in the distribution and aggregation of ultimate and invariable bodies or particles in space. Naturally the supremacy of mechanics became conspicuous first in the domains of those sciences which deal with the visible motions of palpable masses — in astronomy and molar physics; but its recognition is now all but universal in all the physical sciences, including, not only molecular physics and chemistry, but also such departments of scientific inquiry as are conversant about the phenomena of organic life. . . Nine years before the appearance of Newton's *Principia*, Thomas Hobbes declared that «change (*i.e.*, physical change) is of necessity nothing else than motion of the parts of the body changed» — at the same time adding that «there can be no cause of motion in a body but in another body contiguous and moved». Leibnitz. . . insisted that all motion is caused by impact. . . And in the most comprehensive treatise on physics ever published, that of Musschenbroek, it is put forth as an axion that «no change is induced in bodies whose cause is not motion». The most definite statement, however, of the proposition, that the true aim and object of all physical science is a reduction of the phenomena of nature to a coherent mechanical system, is found in the scientific writings published during the second half of the present (19th) century — (**Stallo,** ***Concepts of Modern Physics,*** pp. 14-17).

A passion for considering nature as a mere mechanism of matter and motion, and all its actions as merely mechanical, is a tendency of our day. . . Haeckel tells us that «all natural phenomena from the motions of the celestial bodies to the growth of plants and the consciousness of men, are ultimately to be reduced to atomic mechanics». Huxley. . . has said: — «If there be one thing clear about the progress of modern science, it is the tendency to reduce all scientific problems, except those that are purely mathematical, to questions of molecular physics; that is to say, to the attractions, repulsions, motions, and co-ordinations, of the ultimate particles of matter» — (**Mivart,** ***On Truth,*** p. 395). Huic modernorum theoriæ nec Stallo nec Mivart patrocinatur.

aliquo motu locali conjuncta, eique ad amussim proportionantur. Deinde, inquiunt, juxta legem, quæ *conversio virium* vocatur, motus in calorem et calor in motum commutari possunt. Exinde physici concludunt ad identitatem phænomenorum naturalium cum motu locali. Unde etiam in hac sententia objectum formale sensuum sunt illi motus locales, prout sensus afficiunt (cf. *Nys.*, v. i., pp. 215 sqq.).

Scholastici ultro admittunt activitatem corporum esse cum motu locali conjunctam, quia nimirum ad actionem requiritur præsentia, quæ non habetur nisi per motum. « Nullum corpus (ait **S. Th.**, *C. Gent.*, lib. 2, c. 20) agit nisi moveatur, eo quod oportet agens et patiens esse simul. Simul autem sunt, quæ in eodem loco sunt, locum autem non acquirit corpus nisi per motum ». Aliud autem est motum (ut conditionem sine qua non) comitari activitatem corporis, aliud activitatem in motu consistere. Sensibilia autem propria non esse qualitates veri nominis, sed motus locales, sustineri non potest, quin objectivitas cognitionis sensibilis in summo ponatur discrimine. Unde scholastici contendunt phænomena corporea apte et sufficienter explicari non posse, nisi, præter motum localem, aliæ activitates dentur, quibus corpora mutuo in seipsis varias mutationes producunt.

95. Prob. Thesis. Pars 1ª. *(activitates corporum non sunt motus locales).* **Arg. I.** — Plura occurrunt facta naturæ physicæ, quæ convenienter explicari nequeunt, nisi admittantur activitates corporeæ a motu locali distinctæ; *ergo*.

1°. Nequit explicari *crystallatio,* cujus effectus est opus teleologicum et regulare, constans et specificum, ita, nimirum, ut substantiæ diversæ figuras specifice diversas semper assumant;[1] dum motus localis est indifferens erga quamlibet speciem figuræ.

[1] Scientists have not yet been able to determine the number of elements which constitute the crystalline molecule, but it is well ascertained that these elements are arranged in fixed directions and in an order characteristic of each body. Hence it is necessary that a governing principle should direct the arrangement of the molecules within the crystalline polyhedron by fixing their number

2°. Nequit explicari, cur in *affinitate chimica* unum elementum propter talem motum *eligat,* inter varia alia elementa, unum præ ceteris, quocum compositum chimicum constituat;[1] necnon cur elementum cum aliis combinatum ab illis se retrahat, accedente corpore, quod cum illo majorem habet affinitatem, et unionem cum hoc altero appetat. V.g. calcium et ferrum ex aqua eripiunt oxygenium, quod sibi conjungunt.[2]

3°. Nequit explicari gravitatio seu attractio generalis, quæ inter omnia corpora obtinet. Nam motus corporis attracti est versus corpus attrahens, motus a motu locali productus in directionem oppositum pergit ; impulsus enim natura sua tendit ad gignendum motum ejusdem directionis, quam habet corpus impellens.

Ad hanc attractionem per motum localem explicandam quidam recursum habent ad fluidum subtilissimum, sive ætherem sive materiam quandam *extramundanam,* ubique per spatium et per corpora diffusam, cujus vibrationibus ac impulsionibus corpora ad invicem impellantur. Alii vero theorias sic confictas ut omnino gratuitas rejiciunt (cf. *Stallo,* c. 5, per totum).[3]

and eventually determining their mode of union — (**Mercier**, *Manual,* v. i., p. 61).

[1] Juxta chimicos vis affinitatis inter oxygenium et hydrogenium 400,000 billiones major est quam ipsa attractio inter hæc elementa.

[2] When molecules consisting of two atoms, say AB, come in contact with molecules consisting of two other atoms, CD, and a chemical change takes place resulting in the formation of new molecules, AC, and BD, the question naturally arises, Why does the atom A leave the atom B and attach itself to C? In other words, what determines the rearrangement of the atoms into new molecules? *At present no exact answer can be given to this question.* Chemists express the fact by saying that the chemical affinity existing between A and C is greater than that exerted by B upon A — (**Newth**, *Inorganic Chemistry,* p. 10).

[3] The only impact theory seriously discussed by modern physicists and astronomers is that of Le Sage, which, stated in a few words, is this: Space is constantly traversed in all directions by streams of infinitely small bodies moving with an almost infinite velocity and coming from unknown regions of the universe. These bodies are termed « ultramundane corpuscles ». By reason of their minuteness they rarely, if ever collide, and the greater part of them

4°. Nequit explicari resilientia corporum collidentium. Etenim non est putandum « duo corpora sphærica et elastica ejusdem massæ ejusdemque velocitatis idcirco post collisionem a se invicem resilire, quia vere ac proprie impetus, quibus respective urgebantur ad motum, inter se commutaverint. Hoc enim esset fingere factam esse transmigrationem accidentis ab uno subjecto ad aliud, quod apparet esse impossibile. Quamobrem necesse est prius in hisce corporibus totaliter extingui impetum, quo unum

find ready passage through ordinary sensible bodies, so that all parts of these bodies — those in the interior as well as those on the surface — are equally liable to be struck by the corpuscles, the force of the impact being thus proportional, not to the surface, but to the masses of the bodies. A single body or particle would be equally battered by these corpuscles on all sides; but any two bodies act as mutual screens, so that each receives a less number of impacts on the side facing the other. They are consequently driven towards each other. . .

With all deference due to the authority of the scientific men by whom this theory has been countenanced, it must be said that the extravagance of its assumptions at once characterizes it as a survival of the fancies of an age in which the functions of a scientific theory were imperfectly understood. . . It utterly ignores the necessity of accounting for the origin of the enormous energy constantly expended by the supposed streams of ultramundane corpuscles; *both the agency postulated and the mode of its action are unknown to experience*. . . The futility of Le Sage's theory, however, is most strikingly exhibited by Clerk Maxwell, who tests it by the principle of the conservation of energy. If the ultramundane corpuscles impinging upon sensibles bodies, are perfectly elastic and rebound with the same velocity with which they approach, they will « carry their energy with them into the ultramundane regions », and « in that event the corpuscles rebounding from the body in any given direction will be both in number and velocity exactly equivalent to those which are prevented from proceeding in that direction by being deflected by that body, whatever be the shape of the body and however many bodies are in the field ». In this case, therefore, there is no gravitative action. If, on the other hand, the corpuscles are inelastic, or imperfectly elastic (inasmuch as the action of gravity is supposed to be due to the comparatively small difference between the impacts on opposite sides of the body) the energy of these impacts, at least, which balance each other, must be (partially or wholly, according to the degree of corpuscular elasticity) converted into heat, and « the amount of heat so generated would in a few seconds raise the body, and in like manner the whole material universe, to a white heat »— (**Stallo**, *op. cit.*, p. 63).

versus alterum ferebatur, quam possibile sit ipsa a se invicem resilire. *In omni ergo talium corporum collisione intervenit indivisibile aliquod instans quietis, in quo jam nullo amplius impetu sunt prædita.* Per quid ergo post tale instans pergunt hæc corpora in se invicem agere, imprimuntque sibi impetus, quibus jam retro in oppositas vias tendunt, nisi per vim quamdam elasticitatis, quæ a quovis impetu extrinsecus adveniente realiter differt, proindeque ex essentia eorum emergat? » (De San, *Cosm.*, p. 347).

Ergo plurima facta ordinis physici explicari nequeunt nisi activitates a motu locali distinctæ admittantur, et proinde falsum est activitates corporum in motu locali consistere.

96. II. — Ratio fundamentalis, cur cultores scientiarum naturalium omnem activitatem corpoream ad motum localem revocent ea est, quod phænomena sensibilia cum motu locali semper connectuntur ac ejus intensitati proportionantur ; *atqui* quoties ponitur actus sensationis, manifestantur in centro cerebrali motus vibratorii, qui crescunt vel decrescunt intensitate, prout crescit vel decrescit intensitas sensationis ;[1] nec præter hos motus potest experimentis quidquam aliud in actu sensationis detegi. *Ergo,* si propter prædictam connexionem et proportionem jus datur ad identitatem inter activitatem corpoream et motum localem stabiliendam, pari jure licebit cum materialistis affirmare actum sensationis in motu locali consistere.

III. — Sententia phænomena omnia ad purum motum localem revocans, multa vel gratuita vel etiam falsa supponit. « Nam si calor, lux, electricitas et magnetismus, cohæsio, affinitates chimicæ, colores, soni, odores, sapores, ceteræque hujusmodi manifestationes non sint nisi

[1] « Facta cerebralia a recentissimis physiologistis observata magis magisque ad eam conclusionem collineant nullam existere sensationem, nisi productis in centro aliquo nervoso cerebri vibrationibus calorificis, quarum intensitas crescat vel decrescat, prouti ipsius sensationis intensitas crescat vel decrescat » — (De San, *loc. cit.*, p. 334).

varietates quædam localis motus : ergo quoniam phænomena ejus generis plura simul in eodem corpore dari queunt, inesse dicendi sunt simul in eodem subjecto plures ac diversi motus locales. Deinde, plures et implicatissimi motus fingendi sunt, ac porro finguntur intra corpoream compagem, alii vibratorii, alii rotationis, alii translationis, alii vorticosi, etc. Atqui hæc omnia et sunt contra experientiam, et gratis obtruduntur » (**Urráburu**, *Cosm.*, p. 1173).[1]

97. Pars 2ª. *(sensibilia propria non consistunt in motu locali)*. **Arg.** — Veritas cognitionis consistit in conformitate inter actum mentis cognoscentis et formale objectum, ad quod actus terminatur (cf. *Crit.*, n. 141) ; *atqui* si color, sapor aliaque sensibilia propria non sunt a parte rei nisi motus locales puri puti, nulla existit conformitas, sed manifesta difformitas inter mentis cognitionem et objectum cognitum. Minime enim apprehendimus sensibilia propria ut species motus localis, sed omnino ut species qualitatis corporibus inhærentis et a motu locali plane distinctas. Qui igitur sensibilia propria reponit in motu locali pessumdat veram notionem cognitionis sensibilis. Nec potest hujusmodi logice defendere objectivitatem sensibilium communium; sensus enim non magis ordinantur ad cognoscenda sensibilia communia quam sensibilia propria (immo, his mediantibus cognoscunt priora, cf. *Crit.*, n. 192) ; si ergo sensibilia propria, quæ tanta evidentia elucent, objective non sunt id, quod apparent, haud dissimili ratione dici potest sensibilia communia non esse id, quod apparent, et sic in barathrum idealismi labimur.

98. *Dices* 1°. Ea est natura sensuum nostrorum, ut motus varios sub forma sensibilium qualitatum repræsentent.

Resp. Si sensus natura sua objecta aliter ac in se sunt,

[1] Des physiciens d'une incontestable valeur ne craignent pas d'affirmer qu'à l'heure présente, aucun fait ne justifie la réduction de toutes les énergies matérielles à des forces purement mécaniques et que les équations mathémathiques ne nous représentent point l'être intégral des qualités corporelles — (**Nys**, *Cosm.*, v. i., 248).

repræsentant, natura sua nos fallunt, nec, ut consequens, fidendum est intellectui, quippe qui objectum suum ex sensatione accipit.

Dices 2°. Motus seu vibrationes moleculares adeo minutæ sunt, ut sensibus nostris percipi non possint.

Resp. Cur tunc percipiuntur sub aliena forma vel specie? «Si enim nihil est præter motum, et motus ob suam tenuitatem attingi sensu non potest, nihil prorsus deberet sentiri. Atqui tamen motus quidem nullus sæpe sentitur, et alia diversissima phænomena sentiuntur. . . Certum est corporum notitiam haberi a nobis in hac vita non posse nisi ope qualitatum sensibilium. Certum pariter est qualitates a nobis percipi tamquam aliquid a motu diversissimum. Si ergo perceptio qualitatum est pure phænomenica meraque illusio sensuum, propterea quod illæ non sunt id, quod apparet nobis, sed purus motus; quis fidat sensibus? Quovis jure revincendus erit idealista vel formalista kantianus asserens neque motum ipsum neque corpora ulla esse in rerum natura, sed solum phænomena et spectra corporum, aut certe id a nobis sciri vel affirmari non posse, et proinde formam cognitionum nostrarum esse subjectivam nec circa corporeum mundum aliud decerni a nobis posse, nisi *quale* aut *quomodo* nobis *appareat,* non autem *quid* vel *quomodo* sit?» (**Urráburu**, *Cosm.,* p. 1172).

Dices 3°. Periculum idealismi evitatur eo, quod ratio persuadeat omnia phænomena naturæ, quantumvis aliud appareant, in puro motu locali consistere.

Resp. « Imprimis exinde sequitur sensus nostros in *omnibus suis operationibus,* sola excepta repræsentatione localis motus, decipi. . . Præterea, si repræsentationes sensibilium qualitatum, quibus nihil est evidentius in omnibus nostris cognitionibus, fallaces revera sunt, neque exhibent objectum, prout est in se; videant physici, quid respondere possent ei, qui negaret objectivam realitatem perceptionis motus localis. Denique, ratio certissime non persuadet phænomena omnia naturæ in motu reponenda esse. Argumenta omnia, quibus id evincere physici con-

tendunt, certa nullatenus sunt; sed partim falsissima supponunt principia, partim solum probant phænomena illa motum comitem habere vel eum proxime antecedere vel subsequi, ex quo nullatenus licet, si leges recte ratiocinandi servare velimus, illico identitatem concludere;[1] partim denique ex absurdo puerilique horrore proficiscuntur, quo multi naturalium scientiarum cultores, sensismi, materialismi et positivismi turpissimo luto infixi, quidquid sensilem perceptionem paululum transcendit, quidquid subtilioris abstrusiorisve naturæ aut entitatis sapit, cane pejus et angue refugiunt » *(Idem,* ib.).

Dices 4°. Magna existit similitudo inter doctrinam circa universalia alibi expositam *(Crit.,* n. 229 sqq.) et theoriam physicorum hic rejectam; ibi enim dictum fuit objectum non existere extra mentem secundum modum, *quo* percipitur. Jamvero, qualitates sensibiles in sententia physicorum sunt modi, *secundum quos* sensus sua objecta apprehendunt.

Resp. Haud existit similitudo inter doctrinam scholasticam circa universalia et theoriam physicam circa qua-

[1] Bien que toutes les forces corporelles s'accompagnent toujours de mouvement local et méritent de ce chef le nom de forces mécaniques, plusieurs d'entre elles ont en outre un mode spécifique d'action. Telles sont les énergies physiques : la lumière, l'électricité, la chaleur, le son. Destinées à produire avant tout ces qualités différentielles que nous nommons état thermique, couleur, etc., états manifestement irréductibles à un simple déplacement de la matière, elles se distinguent essentiellement des forces mécaniques ordinaires dont l'effet propre est le mouvement local.

M. Boutroux fait à ce sujet une remarque pleine d'à-propos : « La sensation de chaleur, dit-il, est radicalement hétérogène par rapport à la sensation du son. Puisque cette hétérogénéité ne peut trouver son explication dans la nature de la conscience, il reste qu'elle ait sa racine dans la nature des choses elles-mêmes et que la matière ait la propriété de revêtir des formes irréductibles entre elles. Or, l'hétérogénéité est étrangère à l'essence de l'étendue figurée et mobile, c'est-à-dire, de la matière proprement dite. Le mouvement vibratoire lui-même ne peut être dit hétérogène à l'égard du mouvement de translation. Ce sont simplement grandeurs, directions, intensités, modes divers d'un même phénomène. . . La matière ébranlée semble n'être dans les objets sensibles que le véhicule de propriétés supérieures, lesquelles sont les propriétés physiques proprement dites » — (**Nys**, *Cosm.*, v. i., p. 247).

litates sensibiles. Nam *id quod* conceptu universali apprehenditur, non provenit a facultate, sed revera inest objectis singularibus, licet modus universalitatis, *secundum quem* apprehenditur, operationi facultatis debeatur. Omnino aliter res se habet in præsenti quæstione. In supra enim allata theoria *id quod* (qualitas sensibilis) sensu apprehenditur, negatur inesse objectis secundum illum objectivum modum, quo apprehenditur *(cf.* v. i, n. 230).

CAPUT SECUNDUM.

De Constitutivis Corporum Principiis.

99. Ex corporum proprietatibus naturalis est transitus ad principia, unde hæ proprietates emanant, investiganda. Quæ investigatio philosophos omni tempore multum occupavit et in diversas partes distraxit. Nam alii, qui *atomistæ* vocantur, corpora constare sola realitate extensa existimant. Alii, scilicet *dynamistæ,* tamquam prima corporum principia habent entia quædam simplicia, *i. e.,* substantiolas inextensas activitate præditas, quas *vires, monades* vel *puncta* appellant. Alii denique via media incedentes agnoscunt in corporibus duplex principium, alterum *materiale, formale* alterum, et proinde quodammodo in unum conjungunt systema atomicum solam materiam admittens et systema dynamicum, quod solam formam seu principium activum adstruit. Vocatur hoc systema, ex suis auctoribus, *peripateticum* seu *scholasticum,* et ex principiis, quæ statuit, *hylomorphismus* (ὕλη-μορφὴ), i. e., systema materiæ et formæ.[1]

[1] This theory has received different names: the Aristotelian theory, after the name of its founder: the peripatetic theory or peripateticism, because the school of this name, founded by Aristotle, was in ancient times its official depository: the scholastic theory, on account of the prominent place it occupied in the teaching of the Schools during the middle Ages: the Thomistic theory, in memory of its principal representative, St. Thomas Aquinas: and finally hylomorphism, or the theory of matter and form, since this conception of material essence is one of its fundamental doctrines — (**Mercier**, *op. cit.,* v. i., p. 71).

En français, le terme «hylémorphisme», plus voisin de sa racine.

De his systematibus singillatim agemus, prius nonnullis explicatis notionibus, quæ ad totam quæstionem solvendam viam sternunt.

ART. I.

Notiones Præliminariæ.

100. Species corporum. — Corpora dicuntur *naturalia* vel *artificialia,* prout causis naturalibus et juxta leges, quæ in natura physica obtinent, generantur; vel aliqua arte interveniente componuntur. Corporum naturalium alia dicuntur *simplicia* seu *elementaria (v. g.,* oxygenium, ferrum), quia in alia corpora diversæ naturæ non possunt chimice resolvi.[1] Hæc corpora (quæ supra nonaginta a chimicis nunc enumerantur) exhibent proprietates et operationes *specifice* diversas, quamobrem concluditur ea ab invicem esse specie distincta. Alia autem corpora naturalia *composita* seu *mixta* appellantur, ea, scilicet, quæ ex simplicibus specifice diversis coalescunt; quæque proinde chimice resoluta, denuo simplicia suppeditant. Aqua, *v.g.,* oxygenio et hydrogenio constat, et in eadem est chimice resolubilis. Organismi sunt ita compositi ut et ipsorum componentia sint composita. Si vero corpora mechanice aut physice dividuntur in ultimas particulas homogeneas, quæ divisæ existere possunt, obtinentur *moleculæ*. Molecula autem non est terminus absolute ultimus divisibilitatis realis; vi enim chimica potest ulterius dividi in particulas minores, quæ (quia hucusque non amplius mediis naturalibus divisibiles censebantur)

a prévalu; en anglais et en allemand, on dit plutôt «hylomorphism», ainsi que l'on dit chez nous « hylozoïsme » — (**Descoqs,** *Essai Critique sur L'Hylémorphisme,* p. 4).

[1] That which, chemically considered, is a simple body may be physically composite — nay, must be so, for as long as it is truly a body. A simple body, chemically so called, is a material substance which cannot be resolved into any component substances: whereas a substance is physically simple, if it is incapable of resolution into physical parts — (**Harper,** v. ii., p. 493).

appellantur *atomi*.[1] Nunc vero detecta radio activitate corporum, certum evasit atomos non esse indivisibiles; sponte enim vel vi se dissolvunt in corpuscula magis elementaria, quæ *electrones* vel *iones* dicuntur;[2] docent

[1] Divide up a lump of sugar as much as you please. The smallest mass that you can recognize still has the quality of sugar; and so it must be, if you continue the division down to the molecule. Dissolve the sugar in water, and we obtain a far greater degree of subdivision than is possible by mechanical means; a subdivision which, we suppose, extends as far as the molecules. The particles are distributed through a great mass of liquid; still, the qualities of the sugar are preserved, and, on evaporating the water, we recover the sugar in its solid condition; and, according to the chemist, the qualities are preserved, because the molecules of sugar have remained all the time unchanged. . . It is the molecules in which the qualities inhere. Hence the chemist's definition of a molecule: *The smallest particles of a substance in which its qualities inhere; or, the smallest particles of a substance which can exist by themselves;* for both definitions are essentially the same. . . . How are we to go any further than this? Very easily. I take a few more lumps of sugar, and throw them into this heated platinum crucible, when, in an instant, a remarkable change takes place. We have the appearance of flame, and out of the sugar is evolved a mass of loose charcoal. Evidently this charcoal must have come from the sugar (**Cooke**, *The New Chemistry*, pp. 99-101). So long as the integrity of the molecule is preserved, the substance is unchanged, but, when the molecules are broken up or changed, new substances are the result. We can carry mechanical division no further than the molecule, but, by chemical means, we can break up the molecules, and the parts of the molecule thus brought to our knowledge are the *atoms* — *(Ib.,* p. 134).

[2] Atoms of matter are not simple, but complex: each is composed of an aggregate of smaller bodies in a state of rapid interlocked motion, restrained and coerced into orbits by electrical forces. An atom so constituted is fairly stable and perennial, but not infinitely stable or eternal. Every now and then one atom in a million, or rather in a million millions, gets into an unstable state, and is then liable to break up. A very minute fraction of the whole number of the atoms of a substance does thus actually break up. . . When the break-up occurs, the rapidly moving fragment flies away tangentially, with enormous speed — twenty thousand miles a second — and constitutes the α ray or main emission. . . The emission of the fragment is accompanied by a convulsion of the atom, minuter portions or electrons being pitched off too; and these, being so extraordinarily small, can proceed a long way through the interstices of ordinary obstacles, — seeing, as it were, a clear passage every now and then even through an inch of solid lead, and constituting the β rays: while the atoms themselves are easily stopped.

enim periti atomum constare *ione* seu nucleo (elemento positivo), et electronibus (elementis negativis) quæ in singulis atomis enumerantur plura millia, habentque massam fere bis millies minorem massa atomi hydrogenei, quæque circa nucleum ad atomum formandum se volvunt.[1]

101. Probe inter se distinguenda sunt corpora chimice, et corpora mechanice, composita. In corpore mechanice composito elementa non coeunt juxta fixas proportiones, nec amittunt pristinas suas naturas et proprietates. In generatione chimice compositi corpora simplicia primo in minutissimas partes, seu atomos, discerpi dicuntur; combinatio autem, quæ hanc discerptationem sequitur, non utcumque fit, sed rata quadam et fixa proportione, quæ varia est pro varietate corporum,[2] nec amplius suas pri-

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even by paper. But the recoil of the main residue is accompanied by a kind of shiver or rearrangement of the particles, with a suddenness which results in an *x*-ray emission such as always accompanies anything in the nature of a shock or collision among minute charged bodies; and this true ethereal radiation is the third or γ ray of the whole process. . . It is a simple consequence of the main phenomenon, which is a partial break-up — a sort of convulsion or volcanic eruption — of the atom — (**Lodge**, *Modern Views of Electricity*, pp. 471-473).

[1] D'après l'hypothèse de Lorentz, l'atome chimique forme lui-même tout un monde. On peut le considérer comme une sorte de système solaire, où de petits électrons négatifs jouent le rôle de planètes gravitant autour d'un gros électron positif qui joue le rôle d'un soleil central. En d'autres termes, la partie centrale ou le noyau d'atome chimique est chargé d'électricité positive, c'est la partie la plus considérable de l'édifice atomique. Autour de ce noyau gravitent avec des vitesses énormes les petits atomes d'électricité négative, appelés électrons. Le nombre des corpuscules négatifs qui entourent la partie centrale positive est considérable. . . . L'atome d'hydrogène qui en possède le moins, parce qu'il est le plus petit, en contient probablement plus de 1800. Celui d'uranium et de radium, qui ont un poids atomique très élevé, en renferme certainement plusieurs centaines de milliers. C'est l'attraction mutuelle du noyau positif et des électrons négatifs qui maintient la cohésion du système atomique assez stable, malgré sa complexité, pour demeurer intact dans les réactions chimiques ordinaires — (**Nys**, *Cosm.*, v. i. p. 9).

[2] Chemical combination always takes place in certain definite proportions, either by weight or measure. Thus we may mix to-

stinas proprietates, sed proprietates novas et a prioribus longe diversas, manifestant.[1]

102. Quæstio agitata est philosophica. Quænam sint ultima principia corporum constitutiva, est quæstio philosophica, cujus igitur solutio non ad physicos vel chimicos (ut *Tongiorgi* insinuat, Cosm.), sed ad philosophos spectat. Est enim scientiarum naturalium, phænomena externa et sensibilia corporum observando, varia experimenta faciendo, determinare quænam sint leges, quibus mundus corporeus regatur. Interna autem corporum natura nec sensibilis est nec experimentis comperiri potest, sed solo intellectu usque ad intimas rerum rationes penetrante.[2]

gether sulphur and iron in any proportion we choose, but when, on heating, combination takes place, 56 grains of iron combine with just 32 grains of sulphur; and if there is any excess of one or the other of the substances, that excess remains uncombined. . . So is it, also, in the combination of oxygen and hydrogen to form water. Eight grains of oxygen combine with one grain of hydrogen — (**Cooke**, *op. cit.*, p. 122).

[1] When two or more elements unite chemically, the compound has generally very different properties from its elements taken separately. Salt is a chemical compound of the poisonous gas chlorine and the metal sodium, which by their combination become not only a very wholesome substance, but an indispensable necessity both to animals and plants. Again, the elements oxygen, hydrogen, and nitrogen, so necessary to our very life, will produce, when chemically combined in the proportions HNO_3, the corrosive and deadly poison, aquafortis *(Hydric Nitrate)*.

A mechanical mixture, on the other hand, does not change the properties of its elements; and frequently the components of such mixtures again separate and arrange themselves according to their specific gravities. For instance, pour a little salad oil into some water and beat it up, a creamy substance is the result: but let the mixture stand for a short time, and the oil will separate itself from the water, and will float on the top quite distinct from it. If we now add some potash to the mixture, the oil will not again separate from the water, because a chemical compound will be the result: and the soap which is formed will have detergent or cleansing properties, enabling it to remove the very stains which the mechanical mixture of oil and water dropped upon a piece of linen might have previously made — (**Kinns**, *Moses and Geology*, p. 98).

[2] Experimental science, which deals only with legitimate deductions from the facts of observation, has nothing to do with any kind of essences except those which it can see, smell, or taste. It

Sane, scientiæ naturales, adhibitis omnibus, quæ sibi suppetunt, mediis, non possunt pertingere nisi ad ultimum experientiæ terminum, scilicet ad minutissimam corporis divisionem, quæ tamen pars est corpus, cujus essentia præcise quæritur. Unde, scientiæ naturales, licet suis certis conclusionibus non parum philosopho inserviant ad determinandam corporum essentiam, ad hanc tamen penetrare ipsæ non possunt. Philosophus autem a sua parte debet hac in re semper præ oculis habere quid a chimicis et physicis statuatur, nec in quæstione dirimenda quidquam certis eorum pronuntiatis adversatum debet tueri.

ART. II.

DE ATOMISMO.

103. THESIS XIII. — Atomismus impar est ad explicandam intrinsecam corporum constitutionem.

Stat. Quæst. — Atomismi nomine generatim designatur omne systema, quod docet ultima principia corporum constitutiva esse atomos, *i.e.*, corpuscula extensa, sed indivisibilia; alius dicitur *purus, chimicus* alius.

104. Atomismum *purum* seu *mechanicum* quondam a quibusdam græcis philosophis defensum, deinde post Fidei christianæ ortum oblivioni deditum, sæculo decimo septimo restituerunt Cartesius et Gassendi, quos multi physici recentiores secuti sunt.

Atomismus purus explicatur. *(a)* Elementa, quæ primitus corpora constituunt, sunt atomi seu corpuscula indivisibilia, immutabilia, homogenea. *(b)* Hæc elementa sunt essentialiter extensa, secus apta non essent ad substantias extensas constituendas. *(c)* Carent omni vi et activitate

leaves all others to the metaphysicians. It knows no difference between elementary substances and any other class of substances, except the one already pointed out — (**Cooke**, *op. cit.*, p. 128).

With all becoming respect it must be plainly maintained that the metaphysical question touching the ultimate constituents of bodily substance is outside the limits of any physical science: and for a physicist, as such, to undertake the task, is a transgression against the harmonious order of the sciences — (**Harper**, v. iii., p. 91).

intrinseca; unde, ut corpora constituant, necesse est, ut per motum extrinsecum in unum aggregentur; quem motum ab extra impressum, collidendo communicant inter se et sic in se mutuo agunt. *(d)* Diversitas inter corpora debetur majori vel minori numero atomorum conjunctarum, earum dispositioni, figuræ, ac diversis motibus quibus agitantur; et ex his differentiis resultant diversæ proprietates, quas corpora manifestant. Unde, elementa primitiva retinent suum esse formale in compositis, quæ ab eorum combinatione proveniunt, et proinde in corporum corruptione et generatione nulla fit mutatio vere substantialis, sed diversæ combinationes earumdem atomorum.[1]

105. Atomismus chimicus. Hæc forma atomismi ab atomismo puro in his differt: *(a)* Atomi non sunt omnes ejusdem naturæ sed diversæ pro speciebus corporum simplicium a chimicis admissorum; *(b)* habent pro specifica eorum diversitate diversas vires (attractionis, cohæsionis, affinitatis, etc.) ab ipsarum essentia dimanantes, qua-

[1] Le mécanisme moderne se ramène aux propositions suivantes:

1°. Les atomes des corps simples sont des masses homogènes ou de nature identique. Il n'existe entre eux qu'une différence quantitative de matière et de mouvement.

2°. Toutes les propriétés corporelles se réduisent au mouvement local. L'affinité chimique, les forces de cohésion et de répulsion, les énergies physiques, telles, la chaleur, l'électricité, etc., résultent de l'association ou des modifications variées des mouvements atomiques.

3°. L'entité substantielle de l'atome est d'elle-même inerte, dépourvue de tout principe immanent d'activité. Le mouvement local communique, constitue, sous ses formes multiples, la totalité de son énergie d'emprunt.

4°. Pour expliquer le jeu des activités naturelles et la succession harmonieuse des phénomènes matériels, il suffit de faire appel aux lois de la mécanique. La finalité intrinsèque ou l'adaptation substantielle des êtres à des fins déterminées est une fiction inutile à la cosmologie moderne.

5°. La molécule du composé est un petit édifice construit à l'aide de masses atomiques diverses dont chacune y conserve son être indestructible. Ces petites masses y acquièrent des positions relatives nouvelles, coordonnent leurs mouvements et déterminent ainsi l'état d'équilibre moléculaire. C'est dans ce changement de rapports réciproques qu'il faut placer la raison dernière des propriétés du composé chimique — (**Nys, *Cosm.*,** v. i., p. 86).

rum ope in se mutuo agunt, et sic coeunt ad corpora constituenda. (c) Dum uniuntur, haud subeunt ullam mutationem essentialem, sed manent id, quod erant; ideoque sunt *actu* in composito. Inter catholicos defensores atomismi chimici eminet *Tongiorgi* (cf. ejus *Cosm.*, c. 1, a. 5; cc. 4 et 5).

106. Prob. Thesis. Arg. I. - *(contra atomismum generatim)*. Ut impar ad principia constitutiva corporum philosophice explicanda merito rejicitur systema, quod principia vere ultima non assignat; est enim philosophiæ in sua circa corpora investigatione exquirere principia, quæ adeo ultima sunt, ut ipsa ex aliis non constituantur. *Atqui* atomi, quum et ipsæ, fatentibus atomismi fautoribus, sint corpuscula, et quidem integre in sua entitate constituta ac quadam, licet minima, extensione prædita, nequeunt assignari ut principia, sensu philosophico, vere ultima; sic enim solum affirmatur corpora molis majoris constare corporibus minutissimis; nihil autem in medium profertur ad explicandam naturam, extensionem, substantialem integritatem, quæ his corpusculis competunt. *Ergo* in hoc systemate insoluta manet quæstio de ultimis corporum principiis constitutivis.[1]

107. II.— 1°. Atomismus *purus* docet *(a)* atomos omni intrinseca vi agendi esse destitutas; *atqui* omne ens reale, eo quod habet naturam (quæ est principium operationum), necessario instruitur interna vi agendi; nec potest vis

[1] Whether you divide a body physically to secure the molecule or decompose it chemically to obtain the atom of an element, it is always a complete substance of some sort; and quantitatively it is indefinitely capable of division. You cannot possibly convert the *essentially* composite into the simple by physical division or chemical analysis. You will have body to the last; and body has extension, mass, composite essence. With material substance you began; and with material substance after all your efforts, you must end. *An atom of hydrogen is as much hydrogen as a gallon of it; and the millionth part of a grain of calcium is as much calcium as a square foot of it would be.* Neither physical division, therefore, nor chemical analysis will help us to discover the essential constituents of bodily substance *as such*. Essences are not patent to the senses; they are the object of the understanding — (**Harper**, v. ii., p. 187).

agendi atomis deesse, quin desinant esse vel concipi.[1] *(b)* Docet atomos in unum coalescere per motum extrinsecus impressum, et ex atomis in atomos ictibus communicatum ; *atqui* talis motus est omnino impar ad explicandum, cur in analysi chimica semper et ubique in eadem materia eadem elementa resultent ; cur in synthesi elementa juxta certas proportiones coalescant et easdem species corporum semper et ubique efforment.[2] Dempto enim interno principio motus et operationis, nulla remanet horum phænomenorum ratio præter ipsam elementorum associationem; *atqui* certa associatio, quum sit respectu elementorum plane contingens, etsi fortasse semel vel iterum adesse possit, nequaquam in continua rerum dissolutione et compositione permanere potest,[3] nisi quis *occasionalismum* instaurando associationem Deo immediate tribuere vellet.

2°. Atomismus *chimicus* docet *(a)* tot esse species atomorum, quot corpora simplicia a chimicis enumerantur, et proinde atomos inter se *substantialiter* differre ; *atqui* si admittit *substantialem* atomorum differentiam, debet etiam

[1] A substance without activity would be altogether unknowable, meaningless, and unthinkable—(Dubray, *Intro. Philosophy*, p. 460).

[2] Excipitur casus *isomeriæ* (vide infra, p. 133).

[3] La récurrence invariable des mêmes espèces si bien décrites par la chimie, la physique et la cristallographie, le lien indissoluble qui rattache tel faisceau de propriétés à telle espèce naturelle, les lois immuables qui président à la combinaison et à la décomposition des corps, le déploiement toujours identique des affinités chimiques malgré la variation incessante des circonstances, enfin cet harmonieux enchaînement de causes innombrables concourant à point nommé à la réalisation des effets indispensables au maintien de l'ordre, tous ces faits généraux réclament d'évidence une cause appropriée, qu'on rechercherait en vain parmi les principes immédiats des phénomènes. Mais ces mêmes faits nous montrent aussi, que cet élément nouveau, ce principe stable et permanent d'orientation ne peut résider que dans le fond intime des êtres, dans leur nature spécifique ; le thomisme l'appelle : le principe substantiel de finalité immanente. Le mécanisme l'a rejeté en y substituant son dogme de l'*homogénéité de la matière*. Est-il étonnant que si souvent, au cours de l'examen scientifique de ce système, les métamorphoses ordonnées de la matière et le jeu régulier de ses activités se soient montrés incompatibles avec les caprices du mouvement local ? — (Nys, *Cosm.*, v. i., p. 224).

admittere principium substantiale, quo atomi, et corpora generatim, in sua propria specie constituantur. Quo admisso, systema scholasticum admittitur ; quo negato, logice teneri nequit specifica atomorum distinctio. Præterea, vires et proprietates unicuique speciei atomorum propriæ expostulant principium proportionatum, quod principium nequit esse materia, hæc enim est principium *passivum ;* et quum aliud principium in hoc systemate non admittatur, dicendum est illud impar esse ad ultimum principium corporum explicandum.[1] *(b)* Docet atomos specie diversas, quando ad constituenda corpora conveniunt, mutari quidem quoad locum, motum, dispositiones et mutuas relationes, sed « quamvis intime asso-

[1] It is deserving of attention that according to this author *(Tongiorgi)* all, even simple bodies, which are specifically constituted in their own right, *a fortiori* composite bodies, have certain properties common to all ; which properties equally belong to the primitive atoms or molecules of which they are severally composed. Such are extension, impenetrability, figure, ponderability, mass. By these properties they are all in common distinguished from spiritual substances. Now, where there are generic properties, there must be a generic nature from which these properties essentially flow. If so, the substances in question cannot be absolutely constituted in themselves, but must be determined by a specific difference which, in metaphysical language, is termed a form. To put it more plainly in the concrete: — Hydrogen, oxygen, carbon, iron, sulphur, sodium, etc., are all equally matter composed of atoms, extended, impenetrable, having shape, weight, and mass. This admitted, why is such a portion of extended, impenetrable, atomic matter oxygen, and such another portion iron? Because of the atoms, say you, — their difference in shape, ponderability, etc.? We cannot admit the explanation; because the atoms of oxygen are oxygen; the atoms of iron, iron. Consequently, the same question awaits its answer: *Why* is the one an atom of oxygen, and the other an atom of iron? The substantial form is as necessary for the supposed atom as for the whole bulk. You have reduced mass to an impossible minimum; but you have not destroyed the specific nature. In reply to this question, however, we are seriously told that the figure, weight, etc., of the atom constitute the essential difference. But this is to put an effect in place of its cause; for the shape follows from the nature, not the nature from the shape, and so of the rest. . . Sulphur is not sulphur, because it has such or such a crystalline form and a yellow colour; but the particular body has such a form and colour, because it is sulphur — **(Harper, v. ii., p. 431).**

ciatæ sint, manere tamen id, quod sunt ac nullatenus mutari » (**Tongiorgi,** *Cosm.,* p. 241), et proinde nec atomi nec corpora mutationem vere substantialem umquam subeunt; *atqui* mutatio vere substantialis saltem in nutritione et corruptione viventium locum habet. In nutritione enim substantia, quæ vita caret, mutatur in substantiam vivam, et vicissim in corruptione; viventia autem et non viventia substantialiter differunt. *Ergo.*

Dices: Factum *isomeriæ* (i. e., generationis corporum specifice diversorum ex eisdem corporibus simplicibus, secundum easdem proportiones acceptis) aperte demonstrat veritatem atomismi.

Resp. Minime; nam ex diverso situ elementorum oritur diversitas in ipso modo, quo elementa sub influxu causæ generatricis, se mutuo alterant. Quæ alteratio (ut mox patebit) est dispositio prærequisita ad mutationem substantialem. Eo ipso igitur quod alteratio est diversa, corpora specie diversa generantur.[1]

[1] It is found that utterly different substances, to all appearance, have the same chemical composition and vapour density. Thus butyric acid and acetic ether are both represented by the same symbols, $C_4H_8O_2$; and both have the same specific gravity. Yet butyric acid is that which gives the disagreeable smell to rancid butter; while acetic ether reveals its presence in the refreshing smell of an apple. How is this specific difference between the two substances explained? The three component elements and the relative proportions between them being precisely the same, it is assumed that there is a different distribution of the atoms and a consequent change in the structure of the elements. Can it be seriously held that qualities so different, and substances so distinct, owe their entire differentiation to a mere change of relative position in the same constituents? Surely it would be safer to confess one's ignorance, and wait, rather than rest contented with such an explanation — (**Harper,** v. iii., p. 339).

Quant à la cause qui différencie le mode de distribution des éléments intégrants du composé, elle réside pour nous comme pour les mécanistes dans le mode de préparation de ces espèces isomériques. L'expérience le prouve, pour obtenir des corps de nature différente mais de composition identique, il faut employer des générateurs immédiats différents, ou, s'ils sont les mêmes, changer les circonstances de leur réaction de manière à réaliser une résultante des forces, propres au corps nouveau que l'on veut produire. L'éther acétique, par exemple, provient de l'action de l'alcool ordinaire sur l'acide acétique. L'acide butyrique s'obtient aisément

108. III. Atomismus quocumque modo proponatur materialismo haud parum favet. Nam, si variæ proprietates et differentiæ specificæ, quas in corporibus conspicimus, ex atomis solis aut ex illarum diversa dispositione, etc., proveniunt, cur non potest dici vitam vegetalem in plantis (id quod opinatur *Tongiorgi,* Psych., lib. 1, c. 2, a. 3) et vitam sensitivam et intellectivam in homine non aliud esse quam ' varias resultantes virium mechanicarum et chimicarum.' « Et quamquam fatendum sit catholicos viros, quibus atomistica placet doctrina, materialismi errores ex animo abominari ; alii vero ex principiis hujus systematis ad materialismum amplectendum se adigi arbitrantur. Sane, inquiunt, quemadmodum sola varietas atomorum accidentalis sive secundum figuram, sive secundum ordinem, positionem, motum, sufficit ad specificam diversitatem corporum declarandum, ita etiam sufficere dicenda est ad reddendam rationem phænomenorum organicorum in viventibus. Ex quo semel concesso facile sequitur nullam dari substantiam spiritualem et quidquid in mundo existit, materiam esse aliter et aliter modificatam » (**Urráburu,** *Cosm.,* p. 529).

109. Schol. Non est confundenda scientia chimica cum atomismo chimico, ac si principia chimica simul cum atomismo respuantur. Omnia enim, quæ chimia docet circa existentiam corporum simplicium, leges et conditiones juxta quas in combinationem ineunt, et processum, quo composita chimice dissolvuntur, utpote accuratissimis experimentis comprobata, a scholasticis non minus quam ab atomistis ut indubitata accipiuntur. Quæstio autem philosophica non versatur circa hujusmodi facta explorata, nec circa principia exinde deducta, sed circa internam naturam corporum simplicium et compositorum et primarium fontem phænomenorum, quæ exterius apparent. Quam quæstionem non esse chimiæ solvere nemo

par l'oxydation prolongée de l'alcool butyrique primaire. Or, d'après les idées scolastiques, tout changement dans la résultante des forces a sa répercussion sur la nature même du corps — (**Nys,** ***Cosm.,*** v. ii., p. 372).

non videt. Eo igitur suis mediis pervenit chimia, ubi quæstio philosophica incipit.[1] « Ceterum omnes fere hujus ætatis chimici eo modo, quo scientiam suam circumscribere solent, aperte profitentur suum non esse, ut de ipsa interna corporum natura et constitutione pronuntient quidquam. Quodsi de corporum constitutione quandoque loquuntur, ea non est interna, sed collectio phænomenorum et legum, quibus interna rerum mutatio regitur, quam chimici recentioris temporis industria et assiduitate, qua major vix esse potest, sunt perscrutati et accuratius in dies perscrutari pergunt » (Pesch, *Phil. Nat.*, v. i., p. 137).

Ergo oportet distinguere inter theoriam atomorum, quæ ut hypothesis a physicis et chimicis assumitur ad explicanda phænomena naturalia præsertim chimica; et atomismum, qui, ut systema philosophicum, internam corporum constitutionem ex corpusculis diversimode dispositis explicare conatur.[2]

[1] The physico-chemical theory of atomism, though not a demonstrated truth, offers a satisfactory explanation of a great number of phenomena, and will, no doubt, remain essentially the same, no matter how it may be modified in its details. In chemistry it does not stop arbitrarily in the division of matter, but stops at chemical division. If another science demands a further division, or if philosophy must postulate a division of the atom into essential principles, that is not the concern of chemistry. . . Scholastic philosophy finds nothing in the scientific theory of atomism which it cannot harmonize with its principles, though it must reject the mechanical explanation, often proposed in the name of science, which looks upon the atom as an absolutely inert mass, devoid of all activities and properties. Scholastic philosophers find in the different physical and chemical properties of the elements an indication of specifically different natures. Chemical changes are for them substantial changes, and chemical formulas indicate the mode in which the elements react on one another in the production of the compound — (Wirth, *Cath. Encycl.*, v. ii., p. 54).

[2] The atomic theory has no direct physical evidence in its favour; indeed, it cannot have. It can, therefore, claim no force of inference against the rigid conclusions of the metaphysical science. . . Distinguished chemists consider the truth of the atomic theory to be anything but free from doubt, and only adopt it as a temporary expedient, the best fitted for their present needs. . . The substantial truths that have been so successfully developed by the labour of modern chemists, would remain unimpaired, should the atomic

ART. III.

DE DYNAMISMO.

110. THESIS XIV. — Dynamismus non est par ad explicandam intrinsecam corporum constitutionem.

Stat. Quæst. — *Dynamismus* (δύναμις, vis) *est systema docens principia corporum constitutiva esse entia simplicia* seu *inextensa, activitate prædita* (cf. n. 99). Ratio præcipua systematis in eo est, quod nisi principia inextensa ponantur, non habentur principia, sed corpora jam constituta. Hoc systema debetur *Leibnitz* et *Boscovich,* qui in eo exponendo nonnihil differunt.

1. Juxta *Leibnitz* elementa inextensa seu *monades* fruuntur quadam obscura intellectione (absque conscientia), qua universum sibi repræsentant. In hac perceptione consistit earum activitas, quæ proinde est *immanens*. Nulla igitur in hoc systemate est actio *transiens* unius monadis in alteram. Deus autem disposuit, ut operationes cujusvis monadis cum operationibus omnium aliarum monadum harmonice concordarent. Ex qua stabilita harmonia venit, ut aliæ ab aliis determinari videantur. Corpora non aliud sunt quam complexus hujusmodi monadum juxtapositarum, quæ sunt numero infinite multæ.[1]

theory prove false, and the teaching of the School assume its place. It may safely, then, be doubted whether modern chemistry owes its successes to the influence of this theory; and it is categorically denied that the fact — even if established — of its answering adequately to the known chemical phenomena with which it deals, is a necessary or certain guarantee of its truth — (**Harper**, v. iii., p. 340).

[1] Leibnitz invented the ingenious theory of *Pre-established Harmony*. The universe he holds to be composed of an infinite number of *monads*. These monads are simple unextended substances, energetic atoms, endowed with forces analogous to the ideas or emotions of the mind. . . God is the primitive, uncreated, infinite monad. Spirits and human minds are monads of high rank. Material substances, including the human body, consist of aggregates of inferior monads. There is no real transient action between different monads. The existence of each is made up of a series of *immanent* changes developed in harmony with those of the rest of the universe of monads. The states or « ideas » of each monad reflect, more or less clearly in proportion to its rank, the condition of all other monads. Each monad is a mirror of the universe — a *microcosm* imaging the *macrocosm*—(**Maher**, *Psych.*, p. 262, ed. 5).

Boscovich elementis perceptionem et infinitatem denegat, eis autem tribuit vim, quæ, pro illorum distantia, *attractiva* vel *repulsiva* evadit. Eo igitur phænomenon extensionis oritur, quod elementa per hanc vim attractivam et repulsivam ab invicem se tenent locata.[1] Eamdem fere sententiam tuentur quidam physici et chimici ut *Faraday, Ampère, Cauchy;* necnon *Palmieri,* philosophus, qui existimat entia simplicia habere extensionem virtualem instar spiritus in spatio *(cf.* p. 78).

111. Prob. Thesis. Arg. I. — Illa primitiva elementa, quæ dynamistæ statuunt ut corporum constitutiva, aut se invicem tangunt aut non; *atqui* si non, nulla vera continuitas datur in mundo (n. 58), et eorum mutua attractio et repulsio est vera actio in distans *(Ont.,* n. 391);[2] si se

[1] According to Boscovich « the first elements of matter are points absolutely indivisible and without any extension. They are spread throughout an immense vacuum in such a way as to be always at some distance from one another. The distance may increase or decrease indefinitely, but can never disappear completely without a compenetration of the points themselves, for contact between them is impossible » *(Theoria Phil. Nat.,* n. 7). Hence there can be no continuous extension. The elements are all homogeneous, and by their numbers, distances, arrangements, activities, and relations, produce the diversity of material substances. They have no perception and no appetition. According to their distances, they have a determination to diminish or to increase the interval that separates them. This very determination Boscovich calls force, attractive in the former case, repulsive in the latter. The law of these forces is the following: if the distance between them is infinitesimal, they are repulsive, and the more so in proportion as the distance is smaller; if the distance, although remaining very small, is increased a little, the repulsive force becomes, first less intense, then null, and at a still larger distance is changed into an attractive force. This attraction, again, with the increase, goes on augmenting, then diminishing, till it becomes again null, and changes into repulsion, which, in turn, by the same gradual process, becomes attraction. Such changes may be repeated several times, but only while the distance, though increasing, remains infinitesimal. At greater distance the force is exclusively attractive. To explain the interaction of the points, Boscovich had to admit an *actio in distans;* yet he also admits the possibility of a Divinely preestablished harmony and even of occasionalism (**Dubray, *Cath. Encycl.,*** v. v., p. 222).

[2] La plupart des dynamistes sont partisans de l'action a distance. Plusieurs cependant, tels Leibniz et le P. Palmieri, la rejettent — (**Nys, *Cosm.,*** v. i., p. 319).

invicem tangunt, necesse est, quum partes non habeant, ut se compenetrent et in punctum inextensum coalescant; quo in casu tollitur corporum extensio. Nec ad hoc incommodum vitandum valet fingere entia simplicia *virtualiter* extensa, seu, quæ occupant spatium ad modum spiritus,[1] quia nemo diceret spiritum esse rem vere extensam eo, quod præsens est in partibus spatii, nec talis præsentia exhibet aut constituit phænomenon extensionis.

II. — Leibnitz *(a)* suis monadibus tribuit aliquam obscuram intellectionem; sic autem tollit essentialem differentiam inter materiam et spiritum; *(b)* excludit mutuam actionem inter corpora; et proinde realem e mundo tollit ordinem, quem tamen adesse experientia et ratio evidenter ostendunt; *(c)* denegat monadibus actionem transeuntem; quum vero ex altera parte non possit eis competere actio immanens, a rebus corporeis subtrahit omnem activitatem, et occasionalismum implicite admittit. Leibnitz postea huic suo systemati valedicens ad systema scholasticum se contulit.[2]

Boscovich docet *(a)* elementa inextensa, quibusdam spatiolis separata ac attractione et repulsione prædita, posse sensibus nostris exhibere phænomenon, quod ex-

[1] Les Palmiéristes suppriment logiquement toute distinction essentielle entre le monde des esprits et le monde de la matière en accordant à tous les êtres un même mode d'existence — (**Nys**, *ib.*, p. 323).

[2] Our brief limits do not permit us to enter at much length into philosophical discussions; but it will be enough for us to observe, in passing, that we too have applied, and that not merely in a perfunctory manner, to the study of mathematics, mechanics, and experimental philosophy; and though it must be confessed that in the beginning we were inclined to the very opinions to which we have just alluded *(atomismum et dynamismum)*, yet we have been compelled, by the progress of study, to return to the principles of the old philosophy. And perhaps, were it permitted to explain the course of our researches, there is no one, except those who are pre-engaged by the prejudices of their imagination, who would not admit that these views are not of that confused and absurd character which is commonly attributed to them by those who despise the received doctrines, and who scoff at Plato, Aristotle, St. Thomas and other illustrious men as though they were but children in philosophy — (**Leibnitz**, *System of Theology*, p. 112).

at indivisible points — (**Rickaby**, *Gen. Meta.*, p. 87).

— (**Nys**, *Cosm.*, v. ii., p. 394).

continuous letters, provided each of them possesses a certain ex-

conceptus extensionis non fundaretur in ipsis corporibus, sed proveniret a constitutione facultatis sensitivæ. Quo admisso, habetur idealismus, cui, quominus universalis evadat, nihil obstat; cetera enim, quæ de corporibus percipimus, eodem jure ac extensio, repeti possunt ab aliqua subjectiva dispositione, excluso omni fundamento objectivo. Unde Kantius, videns dynamismum cum suo formalismo plane concordare, hoc systema suum fecit, ac docuit substantiam corpoream in se non cognosci, illam tamen apparere ut aliquid extensum et resistens, et proinde ut aggregatum virium per spatium dispersarum concipi debere. Hinc *dynamismus idealisticus.*

De Energismo. Recens dynamismi forma est *energismus,*[1] qui docet corpora constare energiis vel energiarum complexione ubique in spatio dispositarum. Tota igitur realitas materialis non est aliud quam summa energiarum; totum phænomenon corporeum consistit in reciproca energiarum transformatione, quarum tamen classificatio et reductio ad formulas mathematicas, haud vero earum naturæ indagatio est scientiæ munus. Hoc igitur systema, quum ab ultima corporum ratione investiganda abstineat, non est proprie philosophicum.[2]

ART. III.

DE HYLOMORPHISMO.

113. Rejectis ceteris systematibus de primis corporum

illusion of continuous letters will be possible. This is precisely what takes place in Boscovich's system. . . We have a series of points none of which has extension; and as each one, in so far as extension is concerned, is thus nothing; as between them there is only void space, which is equally nothing, we cannot conceive how from the union of those countless nothings a something — even as an illusion — can arise — (Perrier, *Revival of Schol. Phil.*, p. 101).

[1] The theory of energetics, or as it has been called energism, is a reaction from mechanism, a new form of dynamism — (**Mercier,** *Manual,* v. i., p. 54).

[2] L'énergique s'interdit toute enquête sur la nature des phénomènes. Synthétiser les données expérimentales, les classer, exprimer en formules mathématiques leurs rapports, l'ordre de leurs effets, tel est son but primordial. La théorie nouvelle, en un mot, est une méthode de classification, sans plus — (**Nys,** v. i., p. 399).

principiis, nunc accedendum est ad systema scholasticum, quod corpora duobus principiis, scilicet, *materia prima* et *forma substantiali,* constitui profitetur.

Obs. Præter materiam et formam, quæ sunt principia *in facto esse,* datur principium *in fieri,* quæ est *privatio,* quæ negative concurrit ad corpus constituendum, quia materia, ut novam formam induat, prius alia forma privari debet.

Ut vero hoc systema probe intelligatur, in antecessum necesse est, ut aliquantulum temporis in investigando naturam ac proprietates horum principiorum immoremur. Nec hoc inopportunum censebit ille, qui meminerit quam fundamentale in philosophia scholastica sit hoc systema, quamque necessaria sit ejus accurata cognitio, si doctrinam S. Thomæ quis probe intelligere vellet.[1]

§ 1. De Materia Prima.

114. Definitio.—Materia prima definitur: *substantia incompleta, quæ, ut subjectum primum et indeterminatum,*

[1] It is a grave fact that the doctrine exposed in the present article was maintained by Aristotle, has continued to the present hour, has enlisted on its side such men as St. Augustine, B. Albert the Great, St. Thomas, St. Bonaventure, Duns Scotus, and other Doctors of the medieval Church, together with such men as Suarez, Gonet, Vasquez, and a multitude of philosophers since the Council of Trent. . . The teaching about matter and form is not a mere excrescence which can suffer amputation without affecting the body of the scholastic philosophy. On the contrary it is so interwoven with every part that its rejection virtually involves the rejection of, — we might almost venture to say, — the whole. Finally, it must be added that the prominence given to this particular doctrine, its constant recurrence, the elaborate commentaries on Aristotle's exposition of it, the care bestowed on its proper development, conspire to condemn the rash assumption *(quorumdam auctorum)* that the scholastic doctors adopted it only because it was the prevailing theory of their time. . . St. Thomas develops the peripatetic doctrine touching matter and form, not only indirectly in his theological works, but directly both in his Commentaries on the great philosopher and in *Opuscula* expressly treating on this subject. He extends the theory (if theory it can be justly called) beyond the earth to the Kingdom of Angels, and even to the throne of God. Rejection, therefore, of this particular chapter in the peripatetic philosophy would mean treason to his most intimate and settled convictions — **(Harper,** v. ii., p. 259-261).

simul cum alia substantia incompleta, essentiam corporis constituit.

Dicitur 1°. *substantia (a)* tum quia secus non posset esse constitutivum corporis, quod est aliquid substantiale; ex accidentibus enim nequit substantia constitui; *(b)* tum quia revera est quædam realitas non indigens subjecto inhæsionis *(Ont.,* n. 360).[1]

Dicitur 2°. *substantia* **incompleta**, quia ipsa sola non constituit corpus, sed sua natura ordinatur ad unionem cum alia substantia incompleta, ut exinde oriatur completa substantia corporea *(Ont.,* n. 346, 3°).

Dicitur 3°. *subjectum* **primum**, quia est, ut plures eam definiunt, *subjectum omnium mutationum substantialium;* corpora enim generantur et corrumpuntur; materia autem prima est subjectum, quod desinit esse sub una, et incipit esse sub alia, forma substantiali. Hoc etiam vocabulo distinguitur a materia *secunda,* quæ est corpus materia et forma jam constitutum, et munus subjecti gerens respectu mutationum accidentalium.

Dicitur 4°. *indeterminatum,* quia materia prima, etsi habet aliquam entitatem, tamen, si in se consideratur, non est hæc vel illa determinata realitas, sed per accessum formæ determinari potest ad quamcumque speciem substantiæ corporeæ. Qua ex causa dicitur *nuda potentia* (scil., *passiva* seu *receptiva).*

Reliqua definitionis verba exprimunt intrinsecam unionem materiæ primæ et formæ substantialis. Hæ enim mutuo se complent ac perficiunt ad compositum substantiale constituendum. In qua constitutione, materia prima formæ substantiali præbet subjectum, quo sustentetur; forma autem materiæ tribuit specificam actualitatem *(Ont.;* n. 423).[2]

[1] That which is the essential constituent of a substance, must itself be a substance, however partial, incomplete and rudimentary; otherwise, the *essence* of a substance might be in part composed of that which is not a substance, — a contradiction in terms — *(Idem,* ib., p. 205).

[2] In completest contrast to God, who is pure act, it *(materia prima)* is pure potentiality, wholly actuated and determined by some

Obs. — Allata definitio materiæ est *positiva ; negative* vero sic describitur a scholasticis post Aristotelem : materia prima non est *quid* (i.e., *ens completum*), neque *quantum* (i.e., *quantitas*, quæ materiam sequitur), neque *aliquid aliud eorum, quibus ens determinatur* (i.e., materia non est principium determinans, sed determinabile).

115. Proprietates materiæ primæ. — Ex definitione jam explicata facile colliguntur materiæ primæ proprietates, quarum hæ sunt præcipuæ :—

1°. *Est ingenerabilis et incorruptibilis ;* quod enim *generatur*, præsupponit subjectum, ex quo generetur ; materia autem prima, quum sit primum subjectum, non potest esse terminus generatus. Unde, solum per creationem produci potest. — Quod *corrumpitur* desinit esse, manente ejus subjecto, quod subjectum est materia prima. Hinc solum per annihilationem perire potest.

2°. *Est simplex ;* quod enim est compositum, constat materia *et* forma.

3°. *Appetit formam ;* nam, prout est quid incompletum, censetur habere propensionem ad formam substantialem tamquam ad suum complementum. Omne enim imperfectum ordinatur ad perfectum. Hic tamen appetitus consistit in mera aptitudine materiæ ad recipiendam formam.[1]

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form, in conjunction with which alone it can exist, and towards which its one function is to serve as subject or support, and constitute with it a single being. Hence corporeal being results from the coalescence of the two components, neither of which could connaturally exist apart : the form is the *primus actus* actuating the *pura potentia*, and so giving rise to the *primum esse rei*. Each principle apart is rather *id quo aliquid est*, than *id quod est ;* only the compound is *id quod est* — (**Rickaby**, *Meta.*, p. 87).

La matière première fournit à la forme l'élément substantiel dont elle a besoin, à savoir un sujet indéterminé d'inhérence. La forme confère à la matière le perfectionnement interne que celle-ci réclame, la détermination spécifique. Intrinsèquement dépendants l'un de l'autre, mais à des titres divers, les deux principes essentiels n'existent ainsi qu'en vue de leur union. Dès lors, faut-il s'étonner que d'une telle intégration résulte une seule essence complète, un seul principe foncier d'action, un seul être corporel ? — (**Nys**, *ib.*, p. 57.).

[1] Les scholastiques reconnaissent à la matière une tendance innée, *appetitus innatus, naturalis,* une appétence naturelle pour les formes essentielles. Loin d'eux la pensée d'élever cette tendance

4°. *Est pura potentia*. Hæc proprietas non ita intelligenda est quasi materia prima esset ens mere possibile; habet enim veram realitatem in ordine physico, secus non esset constitutivum corporis principium. Appellatur autem *pura potentia*, quia absolute considerata caret omni forma et versatur in potentia ad quamlibet formam suscipiendam. Exinde sequitur materiam per se habere aliquam realitatem et proinde aliquam essentiam. Nec dici potest talem realitatem ac essentiam ei competere per formam; nam si ita esset, forma constitueret totam corporis essentiam, nec corpus constaret duobus principiis realiter distinctis.[1]

Obs. — Hic quæritur, utrum materia prima, sicut habet suam propriam essentiam, ex se et formaliter habeat suam propriam existentiam, an existat per existentiam formæ. Controversia reincidit in illam circa distinctionem inter essentiam et existentiam jam in *Ontologia* tractatam (cf. *Nys*, v.ii., p. 14). Jamvero, aliqua imperfecta existentia materiæ primæ tribuenda est. Nam *(a)* ea distinctas habere existentias dicenda sunt, quæ distinctis actionibus producuntur; ***atqui*** materia prima olim et semel producta fuit actione creativa, nec alia actione produci potest; formæ autem jugiter producuntur naturali creaturarum activitate. *(b)* Materia prima, utpote formæ substantialis receptiva, debet formam præce-

à la hauteur d'un principe évolutif actif qui transporterait la matière des degrés infimes de l'être jusqu'aux activités les plus élevées de la vie animale. Une telle hypothèse n'est point pour déplaire aux évolutionistes modernes, mais elle est inconciliable avec la passivité radicale de la matière première.

En lui attribuant cette sorte de désir instinctif, l'École voulait simplement mettre en relief la destination naturelle de la matière aux formes spécifiques, ou, si l'on veut, cette plasticité en vertu de laquelle la matière ne se laisse jamais absorber par une forme au point de ne pouvoir plus, dans les circonstances favorables, revêtir d'autres formes plus ou moins parfaites—(**Nys**, *Cosm.*, v.ii., p. 15).

[1] That which really and properly receives, or is capable of receiving actuating forms, must be in some way or other entitatively real. For how can that which has no real entity—no actuality of being,—be truly capable of receiving anything? In order to be capable to receive, it is first necessary to be. Hence primordial matter must have some sort of real entity prior in order of nature to its actuation, and *a fortiori*, to the complete composite — (**Harper**, v.ii., p. 212).

dere prioritate naturæ, et proinde non a forma ei competit hæc prior imperfecta ac inchoata existentia.[1]

In hac controversia S. *Thomas* communiter citatur ab auctoribus ut excludens a materia omnem etiam partialem existentiam: at «Cosmus Alamannus, auctor de S. Thoma egregie meritus, septem et decem argumentis, innumerisque textibus ex operibus Angeli depromptis, confirmat materiam habere existentiam propriam distinctam ab existentia formæ. Idemque Em. Cardinalis Zigliara, opusc. *De mente Conc. Viennensis,* (nn. 22.23.24) diserte affirmat» **(Delmas, *Ont.*,** p. 218).

5°. *Est homogenea in omnibus corporibus;* proprietates enim omnibus corporibus communes (*v.g.*, quantitas, gravitas, inertia) fundantur in materia; ergo dicendum est ipsam materiam, ratione cujus hæ proprietates corporibus insunt, esse eisdem communem. Unde, omnis diversitas, quam corpora manifestant, diversitati formarum tribuenda est.[2]

Inter veteres scholasticos quæstio agitabatur, utrum

[1] If the actual essence of the primordial matter is really distinct from the actual essence of its form, it must of necessity be that its existence should in like manner be distinct from the existence of the form. . . Primordial matter, as presupposed in order of nature to the form, and as subject out of which and in which the generation of complete bodily substance is effected, is something actual. But if something actual, it is something existent, and with an existence after a manner prior in order of nature to the existence of the form. . . Finally: The actual entity of complete bodily substance is composed of two partial entities. Therefore, its integral existence is composed of two partial existences — (**Harper**, *ib.*, p. 208; cf. *Van de Woestyne* v. i., p. 438-443).

[2] All things are in a perpetual flux and reflux. The primary elements join hand and let go again, as they move through the concentric circles of material substance. Yet, as regards *something* of their substantial entity, those atoms remain the same throughout their journeys. The substantial form changes; but the matter remains the same, ready to receive the different forms which successively determine its being. Surely, these facts of nature justify a strong presumption, and more than a strong presumption, that the material cause of all corporal substances is one and the same. . . . Since primordial matter is uninformed, there is no possible foundation of distinction and consequent multiplication. Its plurality is, therefore, a sheer impossibility. Numerical plurality is derived from individual distinction, at least in the instance of real entities; and all distinction is due to the form whence proceeds specific actuation — *(Idem, ib.,* pp. 196-199).

materia corporum cælestium esset diversæ speciei ac terrestrium. Sententia affirmans fuit valde communis. Hodie ope spectroscopii compertum est eadem elementa in cælestibus contineri ac in terrenis, et proinde concludendum est in utrisque materiam primam esse homogeneam.[1]

6°. *Absque forma nequit existere, saltem naturaliter*; est enim pura potentia; quod autem existit debet esse actus vel actuatum. Ne divinitus quidem hoc fieri posse contendit S. *Thomas*. Contradicit *Scotus*. *Suarez* et alii hanc impossibilitatem esse evidentem non audent affirmare. «Controversia tamen (inquit **Pesch**, *loc. cit.*) ad eum modum componi posse videtur, ut id ipsum fieri non posse dicatur non ob defectum realitatis, qua careat materia, sed ob intimam ejus naturam, qua destinetur, ut a forma aliqua semper informata sit». Cf. *Harper*, qui (v.ii.pp. 608-616) sententiam St. Thomæ strenue defendit.[2]

§ 2. De Forma Substantiali.

116. Formarum alia est *externa*, scil., idea seu exemplar alicujus rei efficiendæ; alia *interna*, quæ rem in suo esse affcit vel constituit. Forma interna est duplex: *(a) separata* (ut angelus), quæ alteri enti uniri nequit ad unam

[1] Grâce surtout à l'analyse spectrale, l'identité de nature des corps célestes et des corps sublunaires est devenue aujourd'hui un fait hors de tout conteste — (**Nys**, *Cosm.*, v. ii., p. 17).

The elements hitherto discovered in the sun's atmosphere are more than thirty-six in number, among them being iron, sodium, magnesium, etc. We arrive at a knowledge of the occurrence of such metals in the solar atmosphere with as great a degree of certainty as we are able to attain in any question of physical fact — (**Roscoe** and **Harden**, *Inorganic Chemistry*, p. 423).

[2] Even those who are thoroughly convinced of the logical strength of the Thomist view will recognise the source of Soto's diffidence here. «It is probable,» writes this able Thomist, «that God can keep matter in existence apart from form. . . There is one argument that appeals particularly to me: my intellect cannot but hold that, since primordial matter and substantial form are distinct realities and since neither of them is a part of the other, God can keep in existence one of them apart from the other, for we must not deny God's power except there be irrefragable proof of contradiction: and certainly, no such proof is forthcoming in this present controversy» — (**O'Neill**, *Cosm.*, v. i., p. 131).

substantiam constituendam; et *(b) informans,* quæ substantiam jam constitutam ulterius perficit (forma *accidentalis),* vel ad ipsam substantiam constituendam intrinsecus concurrit. Hæc ultima vocatur *forma substantialis,* et definitur: *substantia incompleta, quæ est actus primus materiæ, quatenus constituit specificam corporis naturam.*

Dicitur 1°. *substantia,* quia, sicut materia prima, est principium corporis constitutivum.

Dicitur 2°. *incompleta,* quia natura sua ordinatur ad unionem cum materia prima, ut ex hac unione resultet tota substantia composita.[1]

Dicitur 3°. **actus primus** *materiæ,* quia sicut materia dicitur potentia pura, ita forma substantialis, quum faciat materiam esse in actu, dicitur *actus materiæ.* Hic autem actus dicitur *primus,* quia per ipsum materia recipit suum esse substantiale seu corporeum, quod certo primum est.

Dicitur 4°. *cum ipsa constituit specificam corporis naturam,* quia materia præbet formæ subjectum informationis *(Ont.,* n. 340, 3°), forma autem tribuit materiæ specificam rationem essentiæ corporeæ. Unde, unio materiæ et formæ non in eo est, ut forma sit intime materiæ præsens, sed in eo, ut, informando materiam, ejusdem potentialitatem ad talem vel talem speciem corporis determinet. Hæc unio dicitur *substantialis,* quia terminatur ad compositum substantiale, in quo utrumque constituens per unum idemque esse, i.e., *esse* totius compositi, subsistit.

Ex nova entitate sic constituta exurgunt proprietates et operationes, non singulis principiis propriæ, sed utrique communes, licet forma, utpote principium specificum et

[1] Both matter and form are sometimes called *substances* by the schoolmen, inasmuch as their coalescence results in a *substantial* being. Except the human soul, however, no *forma* or *materia prima* can exist *per se* apart. The epithet *incomplete* is occasionally used of interior forms to express this circumstance; this adjective more properly, however, connotes the fact that the union of these factors gives rise to *one complete* composite substance. Even the human soul, though capable of subsisting in itself apart from the body, is styled an *incomplete substance,* since it possesses a natural aptitude to form with the body a single *complete* substance — (**Maher,** *Psych.,* p. 558).

activum, sit harum omnium fons et radix. Unio substantialis veri nominis in theoriis atomistarum et dynamistarum impossibilis evadit, quia, quum in his theoriis corpora coalescant elementis, quorum quodque est et manet aliquid completum, nulla major unitas inter hæc elementa existere potest, quam inter partes machinæ affabre conjunctas.

Formæ substantialis hic expositæ est duplex species: *(a) immaterialis* seu *subsistens,* quæ absque unione cum materia existere potest (cujusmodi est sola anima rationalis); *(b) materiale,* quæ extra materiam existere nequit, *v.g.*, anima belluina, et reliquæ formæ inferiores, quæ ideo *penitus in materia immersæ* dicuntur.

117. **Formæ Proprietates.**—Forma 1°. *est radicale principium operationum;* quod enim dat *esse,* dat consequens ad *esse;* operatio autem sequitur esse; ergo a forma ultimatim dimanat. Dicitur *radicale,* quia forma non est principium *quod* agit—tale principium est *suppositum (Ont.*, n. 353, 3°)—sed principium *quo,* et sane remotum seu radicale; facultates enim constituunt principium *quo* proximum. «Agere (inquit **S. Thomas**) non est nisi rei subsistentis, et ideo neque materia agit, neque forma, sed compositum ex materia et forma, *quod tamen non agit ratione materiæ, sed ratione formæ, quæ est actus et actionis principium*» (1°. Dist. 12, q. 1, a. 2).

2°. *Est simplex, (a)* quoad *essentiam,* quum ipsa non constet materia et forma; *(b)* quoad *quantitatem,* saltem per se, quia non est principium extensionis et divisionis. «Quodsi forma est materialis, ex indole sua ea est, quæ compositionem materiæ in se suscipere possit. Est igitur ex se simplex, composita ex destinatione ad materiam» (**Pesch**, *Phil. Nat.*, v. ii., p. 270).

3°. *In singulis corporibus est una actu, sæpe autem multiplex potentia:—una actu*, quia «hoc ipso quod unaquæque forma substantialis constituit substantialem naturam *completam,* ita materiam, quam informat, sibi determinat et ad suum *esse* quasi trahit, ut non admittat in illa formam aliam substantialem» (**Suarez**, *Meta. Disp.* 15, s. 10, n. 63);

—*multiplex potentia,* quia, ut patet in plantis et quibusdam animalibus, formæ materiales multiplicantur cum materiæ divisione. «Ramusculi abscissi inseruntur vel plantantur, et coalescunt; quod non esset, nisi remaneret in eis vita et, per consequens, anima, quæ est principium vivendi; quod contingit tamquam in unaquaque planta anima sit una in actu et multiplex in potentia» (S. Th., *De An.,* lib. 2, lect. 4; cf. *Nys,* op. cit., p. 204, sqq.).

4°. *Superior virtualiter continet omnes formas inferiores,* nimirum, forma superior corpori largitur omnes perfectiones, quas formæ inferiores inferioribus corporibus largiuntur. Sic, *v.g.,* «una et eadem forma est per essentiam per quam homo est *ens actu,* et per quam est *vivum,* et per quam est *animal,* et per quam est *homo*» (S. Th., 1, q. 76, a. 6).[1]

5°. *Forma materialis (a) educitur*[2] *de potentia materiæ, (b) vi naturalium causarum; (c) desinit corruptione per accidens.*

(a) Educitur. Hic modus loquendi metaphoricus est, minime autem meretur, ut nota absurditatis inuratur. Et sane, id quod ex alio educitur, in eo aliquo modo contineri debet, scil., vel *formaliter,* vel *virtualiter,* vel *potentialiter.* Jamvero, in materia forma non continetur *forma-*

[1] From the simplest body up to man, between the world of matter and that of spirit, there stretches a continuous series of essential perfections. According to the Thomistic theory, a single form fixes each of these beings in its nature and subsistence, since every higher form contains virtually, despite its unity, all the perfections of the other forms which it supplants. In the chemical compound, the substantial form is the natural substitute of the chemical forms which have disappeared. In the vegetable, it is the source of the chemical, physical and mechanical activities of the mineral substance which are incorporated in it; it makes them all converge to one end, which is the nutrition and development of the being. In the animal it is the one and ultimate principle of the energies of the brute matter and of vegetative and sensitive life, and in man it is his rational soul, the single principle which makes him at once a living, sentient and intellectual being — (Mercier, *Manual.,* v. i., p. 80

[2] Hoc non dicitur de primitiva forma materiæ, quæ cum materia prima, per modum unius, concreata fuit, sed de formis subsequentibus.

liter, i.e., actualiter, et secundum propriam suam entitatem; nec *virtualiter,* quia materia prima, utpote principium passivum, nequit propria virtute tamquam causa efficiens concurrere ad formæ productionem. Restat igitur, ut forma contineatur *potentialiter* in materia, quatenus nempe materia ad productionem formæ concurrit tamquam subjectum recipiens et sustentans, a quo causa efficiens in sua actione dependet. Itaque, *attento modo productionis,* formam educi e potentia materiæ significat formam produci cum intrinseca dependentia a materia tamquam principio passivo et receptivo. Et, *attenta actione productiva,* formam educi e potentia materiæ significat materiam fieri actu id, ad quod prius erat in potentia. Ideo enim forma e *potentia* materiæ educi dicitur, quia materia capacitatem habet illam determinationem recipiendi, quæ per formam ipsi confertur. Etenim « quemadmodum si quis diceret formam *educi de potentia agentis,* nihil aliud significaret, quam formam fieri per virtutem atque activum influxum efficientis causæ; ita etiam cum peripatetici formam *educi de potentia* materiæ pronuntiant, id unum verbis intendunt exprimere, formam fieri ex præsupposita materia seu dependenter a materia, nimirum per actionem in materia receptam, cujus proinde terminus nonnisi eidem inhærens materiei existere potest. . . Quamobrem, formæ materiales, illæ nimirum, quæ in suo *esse* dependent a materia, dici nequeunt extrinsecus advenire vel superaddi materiæ, quia et sunt, et fiunt penitus eidem affixæ, non secus atque ipsæ formæ accidentales; e converso forma spiritualis, cum habeat *esse* per se, et non dependenter a materia, non fit per materiæ transmutationem, sed actione distincta et creativa, ac proinde dicitur esse ab extrinseco ac materiæ extrinsecus advenire» (**Urráburu,** *Cosm.,* p. 594).

(b) Vi naturalium causarum. Quum in systemate scholastico combinationes chimicæ fiant per destructionem elementorum ac eorum transmutationem, qua nova forma substantialis generatur, adesse debent causæ sufficientes, quæ has transformationes, ideoque formas substantiales,

efficiant. Causæ autem hujusmodi sunt singulorum corporum propriæ vires. Ex mutua enim elementorum in se actione exsurgunt illæ dispositiones, quæ ad educationem novæ formæ prærequiruntur. His dispositionibus vel qualitatibus inest virtus a forma substantiali vel ab externis causis communicata, quæ apta est ad novam generandam formam.[1] Nec objici potest dispositiones esse accidentia; accidentia autem non posse substantiam producere. Nam eam efficiunt non virtute propria, sed virtute formæ substantialis, cujus sunt quasi instrumenta, et sub jugi influxu Causæ Primæ, quæ in causis secundis numquam non operatur (cf. *Nys*, juxta quem Deus specialiter concurrit cum causis secundis in eductione hujusmodi formarum, quemadmodum ipse solus producit formas spirituales, vol. ii., nn 145-150). In his mutationibus efficiendis *causæ proximæ* sunt naturales rerum potentiæ, imprimis affinitates chimicæ; *principia ultima* sunt specificæ elementorum naturæ; calor, electricitas, etc., sunt *causæ instrumentales*.[2]

[1] It must not escape our memory, that in natural generation matter is never for a moment really uninformed: for throughout the generative change, it is either under the form of the corrupted, or under the form of the generated, substance. . . During that time certain alterations take place in the matter. Alterations, as we know, are accidental changes. They have a twofold effect. They indispose the matter for its continued actuation by the old form, establishing a growing incongruity between the two; while they dispose the matter more and more for its actuation by the new form, effecting a gradual congruity between the two. At last the matter becomes wholly unfitted for the retention of the old form and in proximate preparation for the reception of the new one; whereupon the latter is evolved and the new substance generated. Thus, for instance, in a dying animal certain alterations go on in the organism, which render the body less and less fitted for the retention of the living form; till at last the matter is reduced to a condition incompatible with life, and the corpse-form is evolved — (Harper, v. ii., p. 478).

[2] It seems plainly enough to be the teaching of the Angelic Doctor, that the efficient cause of chemical combinations are the substantial forms of the combining elements with their active and passive qualities, — the active, functioning as intruments of the substantial form, the latter receptive of the action or effect. From this mutual action and submission to action on the part of each component element, results that interaction by which chemical combination is effected. According to the same teaching, there are

(c) Corruptione per accidens desinit. Sicut enim forma materialis non potest fieri extra materiam, ita etiam extra ipsam existere non potest; et proinde sicut oritur cum composito, cujus est (simul cum materia) principium constitutivum, ita perit in compositi dissolutione. Jamvero, res duplici modo desinere potest, scil., *annihilatione* et *corruptione,* sicut duplici modo *(creatione* et *generatione)* oriri potest. *Annihilatione* perit res, quæ ita desinit, ut nullum ejus constitutivum maneat; quodsi res desinit, manente tamen subjecto constitutivo, ipsa *corrumpi* dicitur. Unde, corpora et proinde formæ *corrumpuntur.* Duplex autem est corruptio: *per se* et *per accidens. Per se* illud corrumpitur, cujus partes dissolvuntur; *per accidens* vero res, quæ, alio corrupto, simul desinit. Quo modo, corpore corrupto, perit forma materialis; ergo forma materialis *corrumpitur per accidens.*

§ 3. De Mutatione Substantiali.

118. THESIS XV. — Illæ mutationes, per quas nova resultat natura, sunt substantiales veri nominis.[1]

Stat. Quæst. — Scholastici admittunt tamquam principium inconcussum nullum corpus, nullam materiæ par-

certain seminal virtues — shall we call them forces? — in bodies (called *seminal,* because they have been sown broadcast throughout the field of nature), which dispose the matter of each element for a commom transformation, and thus assist the agent-form in the eduction of the new substantial form that is to replace themselves. But these virtues or forces may be said to act immediately upon the qualities, by whose mutual modification the matter is proximately disposed for the substantial change. On this point the chemists are not likely to put in a disclaimer; since they attribute these combinations to the mutual affinities of the elements; and likewise tell us, as a result of experiment and of well-grounded induction, that these combinations take place only under the operation of light, or of heat, or of electricity, or of some similar force — (**Harper,** v. iii., p. 89).

[1] « Plerique AA. mutationes substantiales tamquam fundamentale accipiunt et compositionem hylemorphisticam ex eis interpretantur atque probant. cf. *De la Vaissière* s. j., qui proponit: 'Dantur mutationes substantiales in inorganicis, et consequenter corpora inorganica constituuntur duobus principiis substantialibus, materia scilicet prima et forma substantiali' (Phil. Schol. v. 1, p. 126). — *P. Geny* (Gregorianum, 1920. p. 116): 'La conclusione di questa

tem, de novo creari, nullam annihilari. Ex quo sequitur materiæ quantitatem semper manere eamdem. Unde — quod est fundamentale in systemate scholastico et cardo totius controversiæ circa corporum constitutionem — quoties ex corporibus simplicibus corpus chimice compositum exsurgit, quoties ex composito simplicia evolvuntur, quoties, verbo, corpus specifice novum enascitur, habetur juxta scholasticos vera mutatio substantialis, qua nova forma substantialis e potentia materiæ educitur, expulsa vetere. Unde effatum: *generatio unius est corruptio alterius.*[1]

Atomistæ e contra et dynamistæ opinantur substantias corporeas, non secus ac spirituales, secundum proprias earum naturas esse immutabiles, et proinde novum, quod oritur, corpus differre a componentibus solum quoad accidentia, nimirum, figuram, ordinem, numerum, speciem ac variam coagmentationem elementorum. Et in tali elementorum dispositione consistit mutatio, quam illis placet *substantialem* appellare. « Juxta peripateticos (ait **Tongiorgi**,) fit generatio substantiæ *novæ simpliciter,* nempe, edu-

discussione riguardo alle mutazioni sostanziali, si è che, anche in pura chemica minerale, queste mutazioni da una parte sembrano non potersi negare impunemente, mentre dall' altra vengono solidamente sostenute dai fatti'. *Lemaire* e contra scribit: 'Ratione cognitionum, quas circa conditiones operationum mineralium obtinuerunt hodiernæ scientiæ, graves nonnullæ philosophicæ difficultates impedire videntur, quominus admittere liceat mutationes substantiales in mundo minerali de facto dari' » — (**Van de Woestyne, *Cursus Phil.*,** v. ii., p. 175).

[1] In all corruptions, whether substantial or accidental, the desinence of the previous specific form arises out of the incompatibility of the two forms: that is to say, out of the natural impossibility, that the form of the corrupted substance and that of the newly generated substance should co-exist in the some body. To illustrate: It is impossible that the substantial form of a clover and the substantial form of a sheep should exist together in the same body. . . Since, then, the two forms cannot coexist in the same subject, the presence of the new form postulates, as an essential condition, the cessation of the old form. Accordingly the latter is said to be expelled by the former. The matter ceases to belong to the clover: because it is now under the substantial form of the sheep — (**Harper, v. iii., p. 384**).

ctio novæ formæ ex materia prima : juxta atomistas autem fit generatio substantiæ *novæ secundum quid,* videlicet, substantiæ compositæ ex binis præexistentibus substantiis, *quin novum ullum elementum producatur*. Quæ compositio est accidens respectu componentium, non vero respectu compositi, cum ejus essentiam constituat» *(Cosm.,* p. 222), Exinde intelligitur, cur autument substantias, quamvis completas in *ratione substantiæ,* posse esse incompletas in *ratione naturæ,* quatenus ex ipsis una completa natura, *i. e.,* compositum, resultet *(Ont.,* n. 347).

119. Prob. Thesis. Arg. I. — Ubi reperiuntur proprietates specifice diversæ, ibi existunt substantiæ vel naturæ specifice diversæ ; proprietates enim per necessariam resultantiam sequuntur specificam rei naturam eique proportionantur, sicut effectus proportionatur causæ.[1] *Atqui* in corpore composito manifestantur proprietates specifice diversæ a simplicibus, unde prodit, *v.g.,* hydrogenium et oxygenium sunt gaza et inflammabilia, aqua ex eis resultans nec gazum est nec inflammabilis, sed liquidum, quod flammas extinguit. Jamvero, proprietates novæ et a proprietatibus simplicium diversæ ac eis sæpe oppositæ, quæ in chimice compositis enascuntur, exigunt, ut sim-

[1] A simple chemical change — any effect produced by chemical action — will prove the most familiar and suitable example of a substantial change. If iron filings and flowers of sulphur are mixed together, the result is an artificial or mechanical mixture: the change of state is merely a new relationship between the particles of the iron and of the sulphur. But suppose further that heat is applied. The iron and the sulphur, up to this point separable and distinguishable by mechanical means, disappear ; and a new substance, possessing a set of entirely new properties, is brought into being. It is known as sulphide of iron, because of its two ingredients : but it is no more sulphur, or iron, or a mixture of the two, than gold or copper-oxide is. We perceive a substance, not by our senses, but intellectually, as underlying the characteristic qualities belonging to it and acting on our senses. There is no other way of reaching the thing — substance — or attaining the conception of it. And when the original characteristic qualities have been entirely lost and a new set of accidents, as they are sometimes called, brought into being, we naturally and necessarily infer that a new substance has taken the place of the old — (**Aveling,** *The God of Philosophy,* p. 20).

plicia in sua entitate mutentur et naturam diversam assumant; proprietates enim simplicium diversa elementorum combinatione plus minusve modificari posse, facile intelligitur; sed quod aliæ proprietates evanescant, et aliæ novæ et diversæ succedant, quomodo contingat, quin ipsa corporis substantia intrinsecus mutetur, concipi nequit; id quod chimici atomismo addicti ingenue fatentur.[1]

II. — Non magis inter se differunt corpora simplicia, quam differunt composita a simplicibus, ex quibus resultant; *atqui* atomistæ chimici docent simplicia inter se differre secundum eorum intrinsecam entitatem; eodem igitur jure docere debent composita intrinsece et entitative differre a simplicibus, seu, quod idem est, simplicia, dum coeunt ad compositum constituendum, subire mutationem substantialem. Præterea, inclinatio naturalis elementorum ad determinatas species corporum efformandas explicari nequit, nisi mutationes substantiales agnoscantur; elementa enim substantialiter immutabilia non tendunt nisi ad se mutuo attrahendum et repellendum; exinde vero minime determinantur ad unam præ aliis speciem corporis efformandam, sed quoad omnes species indifferenter se habent. Datis autem elementis, quæ in sua substantia mutari possunt, prædicta tendentia facile intelligitur. Nam dum ratione materiæ adest quædam

[1] Common salt, which is a white, solid substance, and not only harmless, but even a necessary article of food, contains two atoms in its molecules — one an atom of chlorine, which is a yellow gas, intensely suffocating and poisonous; the other, an atom of sodium, a soft, silver-like metal, which takes fire in contact with water. Why it is that a molecule consisting of an atom of chorine and an atom of sodium, held together by chemical affinity, should be endowed with properties so totally different from those of the contained elements *is altogether unknown*; and, similarly, it is quite impossible to predict from the properties of any compound what are the particular elements of which it is composed. Thus, sugar is a white, crystalline solid, soluble in water, and possessing a sweet taste, but no one would have ventured to predict that the molecules of this substance were composed of atoms of *carbon (i.e.*, charcoal), a black, tasteless, insoluble solid; *hydrogen*, a colourless, tasteless gas, and *oxygen*, another colourless, tasteless gas — (**Newth**, *Inorganic Chemistry*, p. 10).

passiva tendentia in formas diversas (n. 115, 3°); ratione formarum quodque elementum habet activam tendentiam ad similitudinem suæ formæ aliis communicandam, juxta illud : *omne agens agit simile sibi*. Unde, quando diversa elementa in invicem agunt, ipsa se mutuo transmutant in aliquam substantiam, quæ de singulis aliquid participat. *Ergo* naturalis elementorum tendentia ad compositum formandum ostendit corpora esse substantialiter mutabilia (cf. *Nys,* v. ii., n. 140).

III. — In regno vegetali et animali jugiter fiunt mutationes, quibus materia anorganica fit organica seu vivens ; organica autem seu viventia ab anorganicis substantialiter differunt (n. 171 sqq.) ; *ergo* non-viventia substantialiter mutantur in viventia, quando hæc generantur vel nutriuntur.

§ 4. De Modo, quo Elementa manent in Composito.

120. — Ex mente atomistarum, corpora composita in mera simplicium aggregatione reponentium, sequitur elementa, retenta propria eorum essentia, manere realiter in composito. Scholastici vero, dum ex una parte contra atomistas contendunt composita per eductionem formæ substantialis generari ex elementis, et ideo compositum essentialiter constitui principio (*i. e.,* forma) a principiis suorum simplicium specifice distincto ; ex altera parte inter se non conveniunt « utrum realitates illæ, quæ in elementis munere formarum fungantur, ad novæ rei generationem totæ corruant necesse sit, an, informandi munere abdicato, ipsæ existentiam porro trahant» (**Pesch**, *Phil. Nat.,* v. i., p. 301). Juxta *Albertum Magnum* et alios *(v. g., Pesch, Donat, Descoqs, Dario)* elementa secundum suam realitatem eamque totam (materiam et formam) insunt in composito ; formæ igitur elementorum non prorsus intereunt, quando oritur nova forma substantialis, sed tantum rationem formæ amittunt, *i. e.,* « retinent quod habuerunt, sed intrinsecus adjunguntur et subordinantur, tamquam materia, formæ superiori », sicut « quum murus altius extollitur, quæ summa in eo

fuerunt, manent realiter, *summa* non manent » *(Pesch)*. Atvero, intelligi nequit, quomodo formæ elementorum maneant absque munere informandi, quum natura sua ordinentur ad materiam informandam, nec sint actus subsistentes *(Ont.,* n. 321). Præterea, hæc sententia tot in composito ponit realitates, quot sunt species elementorum unde compositum confluit; quo admisso, valde difficile explicatu evadit unitas per se compositi (cf. *Nys,* v. ii, n. 162).[1]

121. Alii communiter cum *S. Thoma* docent elementa in composito manere *virtute,* i.e., materiam primam elementorum, destructis horum formis, determinari ad novam substantiam corpoream per formam compositi; ita tamen, ut præter materiam primam elementorum maneant quædam eorumdem qualitates vel vires aliquo modo alteratæ ac temperatæ.[2] Ratione harum qualitatum compositum ita temperatur, ut in ejus resolutione eadem elementa cum iisdem qualitatibus iterum appareant.[3] Cau-

[1] Auctores hujus opinionis censent quæstionem de modo, quo elementa insint composito, libere agitari posse absque præjudicio systematis scholastici circa corporum constitutionem. Unde, **Willems**, philosophus in scientiis naturalibus perdoctus, scribit: « Utraque sententia est probabilis, modo forma substantialis nova admittatur, qua substantia composita in nova specie constituatur. Prior melius explicat, cur qualitates quædam elementorum in composito maneant, et destructo composito elementa iterum inde resultent, et videtur facilius componi cum certis scientiæ naturalis experimentis. . . Altera autem sententia S. Thomæ magis sibi consentanea esse videtur novasque species compositorum eorumque qualitates et activitatem ab elementis specifice diversas melius et facilius explicat » — *(Cosm.*, p. 116).

[2] « In generatione mixti *(i. e.*, compositi) non fit spoliatio simplicium usque ad materiam primam, aliter *virtutes* simplicium non manerent in mixto, nunc autem manent » — (**S. Th**, *De Nat. Mat.*, c. 8). « Formæ elementorum manent in mixto non *actu* sed *virtute;* manent enim *qualitates propriæ* elementorum, licet remissæ, in quibus est virtus formarum elementarium » (1, q. 76, a. 4, ad 4).

[3] La permanence virtuelle des éléments dans le composé chimique, et partant la possibilité physique de les faire renaître, tiennent à deux causes. La première, ou la cause *éloignée,* réside dans la nature même de la forme essentielle du composé; elle est le substitut naturel des formes élémentaires dont elle contient, malgré son unité, les énergies foncières. La raison *immédiate* de cette permanence est la reproduction intégrale dans l'être nouveau des

te igitur distinguenda est permanentia *virtualis* formarum a permanentia *mere potentiali*. Forma *virtualiter* manet, quando compositum habet specialem dispositionem, ut una forma præ aliis ex ejus potentia educatur. Forma *potentialiter* manet, si nihil aliud habetur quam nuda potentia passiva quoad diversas formas.[1]

propriétés réelles, mais atténuées, des composants. Au sein même de la synthèse, chacun des corps simples constitutifs est représenté par un ensemble de propriétés analogues à celles dont il était revêtu au moment de la combinaison. Tel est le sens vrai du « *virtute manent* » si souvent employé dans les œuvres d'Aristote et de S. Thomas — (**Nys**, v. ii., p. 285).

[1] « Dogma peripateticum est, intereuntibus elementis in combinatione, virtutes eorum quasi hæreditario jure ad mixta devenire. Quare, mixta corpora, licet formaliter non includant elementa, illorum tamen specialibus virtutibus quodammodo locupletantur et fecundantur, ut accedentibus aliis causis extrinsecis, quæ mixtionem destruant, iterum formæ elementorum gignantur. Quod ut intelligas, nosse debes mixtionem non esse meram unius in aliud transmutationem. Corpus enim quod in aliud simpliciter transmutatur, in illud convertitur, ejusque naturam et vires acquirit, ***amissis omnibus, quæ prius habebat, excepta materia prima.*** Cum autem a duobus aut pluribus corporibus fit substantialis mixtio, neutrum illorum in alterutrum convertitur, sed ex utroque tertium quiddam ab eis diversum gignitur. Et mixtionis modus talis est, ut elementa invicem agant, et patiantur per vires suas inter se confligentes, unde procedit formarum ac naturarum elementarium corruptio, et formæ novæ et naturæ mixti generatio. Jam, vires ac virtutes elementorum in hoc mutuo congressu non omnino pereunt, secus enim elementum illud, cujus vires omnino perirent, non posset dici cum aliis misceri, sed simpliciter corrumpi, inque aliud transmutari. Mixtum igitur virtutes elementares in se contineat oportet; non quidem in eo summo gradu, in quo possidentur ab elementis secundum proprias suas formas existentibus, sed in eo gradu temperato ac refracto, ad quem redactæ sunt in mutuo illo actionis et passionis conflictu. Quæ cum ita sint, adest in mixto non sola passiva atque indifferens possibilitas, ut ope actionum chimicarum reproducantur elementa, sed vera virtus, et activæ potentiæ participatio quædam ex intereuntibus elementis remanens, ratione cujus agentia naturalia in mixti dissolutione ea præ aliis generent elementa, quorum virtus fecunda et quasi semen in eo conservatur. Ex quo etiam intelligi potest, cur in corpore mixto seu chimice composito remaneant adhuc affinitates pristinæ componentium, quarum ratione, si quod aliud corpus accedat, cum quo majorem gerat affinitatem aliquod ex componentibus, dissolvitur prior chimica compositio novaque alia peragitur » — (**Urráburu**, *Cosm.*, p. 488).

122. Veritas hujus sententiæ sic evinci videtur:—

1°. Si elementa secundum eorum realitatem manerent in composito, externe se manifestarent per suas proprietates; ubi igitur alicujus substantiæ proprietates se non manifestant, ibi ejus præsentia jure merito negatur, quum ad cognoscendam præsentiam et naturam rei cujusvis non alia media præter ejus proprietates naturaliter nobis suppetant. *Atqui* chimici etiam ii, qui veram mutationem substantialem admittere nolint, fatentur proprietates elementorum amitti in composito.[1] *Ergo* si proprietates elementorum non amplius subsistunt, logice concludendum est ipsa elementa periisse.[2]

2°. Si elementa suam entitatem servarent in composito, quum se mutuo compenetrare nequeant, diversa elementa diversa occuparent loca; *atqui* observatio scientifica nullam hujusmodi localem diversitatem inter elementa detegere potest, sed ubique per spatium composito occupatum reperitur massa perfecte homogenea. Sic, in aqua nullibi apparet atomus oxygenii vel hydrogenii, sed quælibet pars aquæ est aqua, sicut quælibet pars oxygenii est oxygenium. Nec hoc chimici negant; fatentur enim omnia nota phænomena contrarium persuadere.[3] Sententia igi-

[1] We must be careful not to transfer our ideas of composition drawn chiefly from the mixtures we use in common life, directly to chemistry. In these mixtures the product partakes, to a greater or less degree, of the character of its constituents, which can be recognised essentially unchanged in the new matter, *but in all instances of true chemical union and decomposition, the qualities of the substances concerned in the process entirely disappear, and wholly different substances, with new qualities, appear in their place* — (**Cooke**, *The New Chemistry*, p. 114).

[2] In the light of atomic hypothesis, chemical compositions and decompositions are in their nature nothing more than aggregations and segregations of masses whose integrity remains inviolate. *But the radical change of chemical properties, which is the result of all true chemical action, and serves to distinguish it from mere mechanical mixture or separation, evinces a thorough destruction of that integrity* — (**Stallo**, *Concepts of Modern Physics*, p. 100).

[3] So long as sulphide of iron remains sulphide of iron, *no scrutiny can detect in it either sulphur or iron*, and we must have recourse to other chemical processes in order to reproduce these substances — (**Cooke**, *op. cit.*, p. 120).

tur, quæ affirmat simplicia manere realiter in composito nec cum proprietatibus compositi videtur concordare, nec ullum fundamentum satis solidum in experimentis scientificis habere[1]; etsi «semper defensores habuit, et numerus eorum progrediente tempore auctus est» **(Donat).**

123. *Dices:* Vi chimicæ analysis obtinentur elementa eisdem donata qualitatibus, quas ante compositionem habebant; quod contingere non posset, si elementa in composito actu non inessent.

Resp. Qualitates elementorum *virtualiter* manent in composito; unde, quando compositum destruitur, iterum apparent elementa et qualitates non quidem *numero* sed *specie* eadem. Analysis enim chimica non est divisio me-

[1] The fact of chemical composition plays an important part in scholastic cosmology; and although a few mediæval philosophers, such as Albert the Great, taught that the elements remained in the compounds, and one of the greatest among the neo-scholastics, Liberatore, holds that the theory of essential changes in chemical processes is not necessarily connected with the scholastic system, it is nevertheless incontrovertible that the majority of scholastics admit in chemical combinations an essential transformation, and Mr. Nys bases on this very transformation his strongest argument for the existence of matter and form. According to this view, oxygen and hydrogen do not really exist in water, as there takes place, in the act of combination, a real change of nature. The only means of knowing the truth in this matter is experience; but the most powerful microscopes show us, in the particles of a compound, the most perfect homogeneity, and the dissolvents of its simple elements have upon it no effect whatsoever. The atomistic view that an atom of water is a mere juxtaposition of two atoms of hydrogen and one of oxygen is consequently pronounced to be arbitrary and unscientific, and unable to account for the essential difference which exists between a mixture and a combination.

And here Farges brings forth the example of gunpowder, in which the three elements of saltpetre, sulphur, and carbon are so intimately intermingled that no microscope enables us to discern their presence. Still, the heterogeneity of the compound and its character of mixture can be shown by means of dissolvents. Water dissolves saltpetre and has no effect whatever upon sulphur and carbon; then another chemical product may eliminate sulphur, leaving carbon in a state of isolation. On the other hand, no dissolvent of the elements of a chemical combination has any effect upon the compound. Its homogeneous character remains unaltered, and the only means of separating its elements is another chemical operation — **(Perrier, *Revival of Schol. Phil.*, p. 90).**

chanica, qua una particula ab alia separatur, sed actio vere transformativa, quæ, destruens intimam compositi naturam, determinat existentiam et specificam naturam elementorum in ipso virtualiter contentas.[1] Ad quam analysim peragendam chimica adhibent causas potentissimas (*calorem, electricitatem*),[2] quibus non repugnat, ut actione sua intrinsece destruant præviam substantiam et generent elementa et qualitates specifice identica cum eis, quæ ad compositum formandum concurrerunt.

§ 5. Probatur Systema Scholasticum de Corporum Constitutione.

124. THESIS XVI. — Ultima principia substantiæ corporeæ constitutiva sunt materia prima et forma substantialis.

Stat. Quæst. — In sententia scholastica probanda ac defendenda præprimis sedulo distinguenda est pars ejus physica a parte philosophica. Omnes enim ultro fatentur veteres scholasticos, eo, quod eis deficiebant media, quæ

[1] What is the plain inference from sensible experience? It is that both oxygen and hydrogen have in combination lost all their specific qualities and have acquired now qualities. They have not only lost that amount of molecular agitation which kept them in their gaseous state, they have lost those qualities, or modes of reaction, which distinguished them from other gases and solids. The oxygen will not now oxidize, the hydrogen will not flame. If this is not destruction, destruction has no meaning; if this is not change, nothing is changeable. Theory declares that the oxygen has not changed; and fact declares that the oxygen has utterly changed. Theory infers that oxygen is indestructible, in spite of the fact that oxygen has been destroyed. . . The surprising recovery of all the original characters, after the element has undergone a multiplicity of changes destructive of those characters, is supposed to prove that what is thus recovered could not have been lost. Hence the conclusion is drawn that throughout its apparent changes the element has really preserved its integrity. But looked at closely, it is seen that all which remains the same is the possibility of restoration, that what is now lost will reappear whenever the requisite conditions of its reappearance are restored — (**Lewes**, *Problems of Life and Mind*, v. ii., p. 55).

[2] The amount of energy required to decompose a pound of water into its constituent gases would be adequate to raise a weight of 5,314,200 pounds one foot high — (**Cooke**, *op. cit.*, p. 114).

If all the energy contained in 15 grains of radium could be suddenly developed, it would suffice to blow the entire British Navy a mile into the air — (**Windle**. *The Church and Science*. p. 75).

nunc præsto sunt, ad naturam investigandam, plura minus recta docuisse circa scientias physicas, ut, *v.g.*, corpora sublunaria et cælestia essentialiter differre ; elementa esse quattuor, eaque mutuo transmutari posse[1], cælum sidereum esse causam efficientem in elementorum compositione, et alia hujusmodi[2]. Hæc omnia, quippe quæ non afficiunt ipsam systematis substantiam sed quæstiones physicas cum systemate connexas, expungi possunt, quin ipsum ullum patiatur detrimentum, « neque objici serio possunt nisi ab iis, qui aut imperitam multitudinem decipere aut invidiam facere volunt gravissimis causis, quas firmioribus argumentis nequeant oppugnare » (**Urráburu**, *Cosm.*, p. 562).

125. Quodsi quæstio moveatur de systematis certitudine, non idem sentiunt ejus moderni defensores. « Peri-

[1] Nowadays the alchemists' dream seems to have been a vision of the truth. Within the last two or three years artificial transmutation in the laboratory has been claimed by several workers. (In July, 1924 Prof. Miethe, of Charlottenburg, reported that he had obtained a transmutation of mercury into gold. . . In November, 1925, Prof. A. Smits, of Amsterdam, reported a transmutation of lead into mercury). Some time will be required before the claims are confirmed by independent work under rigorous conditions. There is, however, little doubt that transmutation takes place regularly in the great laboratory of nature: evidence here has been accumulating for the last thirty years — (**Browne**, *I. E. Record*, July, 1926, p. 37).

[2] A single stroke of the pickaxe has stripped the walls of the old scholastic edifice of a whole pile of decayed and mouldering plaster : theories transparently false, inspired by erroneous astronomical physics and applied to the interpretation of nature, and in which arbitrary observations of phenomena were connected by bonds no less arbitrary with cosmological or metaphysical principles. Only a fool would nowadays maintain the relative superiority of the substance of the stars compared with that of the earth. Their incorruptibility, their substantial individuality, their peculiar mode of composition from matter and form, their subjection to extrinsic spiritual movers, their influence on the generation of certain forms of mundane life : these are some of the theories defined by St. Thomas, but repudiated by all modern scholastics. The same applies to numerous theories in «terrestrical physics», such as that of the *locus naturalis*, and that of the four chemically simple bodies with their sets of properties — (**De Wulf-Coffey**, *Scholasticism Old and New*, p. 211).

pateticam sententiam (ait **Lepidi**, v. iii., p. 80) *ut verisimiliorem* propugnamus, utpote quæ rationabilius, satiusque respondet animo quærenti de modo, quo mutationes et compositiones substantiales in natura fiunt. Eam autem tamquam sententiam *omnino certam,* quæ animum ab omni formidine liberet, defendere non audemus ».

« Doctrina de principiis essentialibus corporum, esto sub quodam adspectu *valorem demonstrativum non attingat,* ut ego teneo et candide fateor, nihilominus pondere rationum non caret, immo illam etiam cosmologice exclusive spectatam existimo præ ceteris systematibus longe majorem probabilitatem præ se ferre » (**Zigliara**, p. 67). Idem sentiunt et nonnulli alii.

Alii systema ut in se certum defendunt. « Systema hylomorphicum 1°. ad capita primaria quod attinet, tamquam omnino certum admitti debet; 2°. certum etiam in iis est, quæ proxime ex illis consequuntur et solis innixa sunt philosophicis rationibus; 3°. ad mutationes chimicas explicandas adhibitum pro ea, qua hæc nostra ætas pollet, rerum naturalium peritia, etsi non omni ex parte certum, tamquam hypothesis omnium optima est; 4°. ad facta, quibus nititur, quod spectat, sine systematis detrimento ea, quæ recte a recentioribus doctoribus observata sunt, illis substituuntur, quæ a veteribus minus accurate conjiciebantur » (**Pesch**, *Phil. Nat.*, v. i., p. 373).[1]

Capita primaria sunt: *(a)* duo principia, *materiale* alterum, alterum *formale,* agnoscenda sunt in corporibus; *(b)* hæc principia, incompleta in ratione substantiæ, constituunt tum in organicis tum in anorganicis *unum per se* per mutuam eorum communicationem; *(c)* hæc principia realiter distinguuntur, et se habent ad invicem ut principium determinabile et principium specifice determinans in ratione substantiæ corporeæ.

126. Negari quidem non potest nonnulla in hoc systemate contineri, quæ obscuriora atque intellectu difficiliora sint; sed sicut ea, quæ clara sunt, non hanc ob causam

[1] As Suarez justly observes, «the philosophical doctrine touching substantial form is most certain» — (**Harper**, v. ii., p. 458).

vera sunt; ita quæ obscura apparent, non ideo falsa existimari debent. Sed quidquid de ejus difficultate censeatur, non facile de ejus veritate dubitare licet; indivulso enim nexu conjungitur cum pluribus doctrinæ capitibus sive philosophicis sive theologicis, quæ, rejecto præsenti systemate, vix defendi possunt. Et licet nullam directam sanctionem ab Ecclesia acceperit, tamen « est hoc dogma ita receptum in philosophia, ut sine magna ignorantia id negari non possit; estque ita consentaneum veritati Fidei christianæ, ut ejus certitudo non parum inde augeatur » (Suarez, *Meta.*, *Disp.* 15, s. 1, n. 5; cf. notam p. 141).

127. **Prob. Thesis. Arg. I.** — In rerum natura admittendæ sunt mutationes vere substantiales (n. 119); *atqui* mutationes substantiales nec explicari nec intelligi possunt, nisi corpora ex duobus principiis substantialibus, altero permanente *(materia prima)*, transeunte altero *(forma substantiali)*, composita dicantur; *ergo*.[1]

Prob. min. — Ut mutatio unius substantiæ in aliam habeatur, duo requiruntur: *(a)* ut aliqua realitas seu pars substantiæ mutatæ, permaneat in substantia ex ea generata; secus enim prior substantia ex toto periret seu annihilaretur, et substantia de novo constituta crearetur; *(b)* ut in corpore mutato quædam realitas substantialis desinat existere, et in corpore exinde generato nova pars substantialis incipiat existere; secus enim prior substantia in sua specie integra permaneret, et nulla substantia nova existere inciperet. *Atqui* illa pars substantialis, quæ jugiter permanet ut *subjectum* mutationis, quæque in potentia est, ut determinetur ad hanc vel illam speciem corporis, est *materia prima;* illa pars substantialis, quæ modo recedit, modo advenit, quæque partem permanentem et potentialem actuat ac determinat ad hanc vel illam speciem corporis, est *forma substantialis*. *Ergo* substantia cor-

[1] Gli scolastici antichi ammettevano, salvo poche eccezioni, tanto le mutazioni sostanziali, quanto le accidentali. . . Questo argumento rimane solido, et conserva suo posto importante fra gli argomenti fisici in favore della tesi — (Geny, 'Gregorianum', 1920, pp. 99 et 116. *Metafisica ed esperienza nella Cosm.).*

porea essentialiter constituitur materia prima et forma substantiali.[1]

Minor paulo aliter probatur. Ut una substantia corporea in aliam mutetur, requiritur: 1°. subjectum, quod sub duplici termino (scil., *a quo* et *ad quem)* idem permaneat. Quod subjectum debet esse *(a)* principium substantiale, secus non conferret ad substantiam constituen-

[1] A palmary proof of the existence in nature of a primary subject of substantial changes is derived from the never ceasing interchanges, the corruptions and generations, of bodily substances. One substance is transformed into another; and then, the latter is transformed back again into the former. *Hydrogen and oxygen,* in due combination, are by the agency of the electric spark transformed into *water;* and *water* by the same agency is transformed back again into *hydrogen and oxygen. The matter of a living animal* (its flesh and blood), having been transformed into inorganic substances, in the process of retrograde metamorphosis, becomes the *food of a plant;* and *the plant* becomes *food (i.e.,* enters into the substance), *of an animal.* That animal may be the very one from which this travelling matter originally came. *Carbonic acid,* existing in the atmosphere, is decomposed by plants. The plants, giving up to the air the oxygen of the compound, retain the carbon for the formation of their several constituents. Some of these plants, in the form of vegetable food, supply to animal life their substance containing the carbon which, distributed through the system in various forms, is brought into contact with the oxygen supplied by the lungs, and is given forth in respiration in the form of *carbonic acid.* Here it is again at last; yet what a journey that carbon has made through the various orders of nature! Wherefore, *all transmutation or transformation requires a subject common to each term of the change;* that is to say, common to the form displaced and to the one substituted in its stead. Unless this were so, there would be no real, entitative connection between the two terms and, as a consequence, no physical change. The first term would be simply annihilated, and the second term created. But both annihilation and creation are above the power of natural action — (Harper, v. ii., p. 191). Whence comes it that a *diamond* is always a diamond, *iron* always iron, *sulphur* always sulphur, *hydrogen* always hydrogen, to whatever accidental changes they may be exposed, until by chemical combinations corruption has taken place and a new substance been evolved? Each has its own perfectly distinct nature, or essence. Whence has it derived such essence? Not from any matter, as has been repeatedly proved already. Not from any accident; for it is ridiculous to suppose that a mere accident can cause the specific nature of a substance. Thus the conclusion is peremptory, that *bodies are constituted in their specific nature by a substantial form — (Idem, ib.,* p. 410).

dam ; et *(b)* in se indifferens, secus non posset intrinsecus concurrere modo ad hanc, modo ad illam, substantiam corpoream constituendam. Requiritur 2°. ut a prædicto subjecto *(a)* illud recedat principium, ratione cujus subjectum specifice determinabatur; *(b)* et accedat aliud principium, ratione cujus naturam specifice novam assumat. *Atqui* subjectum, quod est permanens (et indifferens) sub utroque termino mutationis, est *materia prima ;* principium ad cujus recessum (vel accessum) corpus destruitur (vel constituitur), est *forma substantialis; ergo* substantia corporea essentialiter constat materia prima et forma substantiali.

128. II.— Quum proprietates participent naturam principii, a quo dimanant, proprietates oppositæ (quarum, scilicet, una negat, quod altera affirmat) nequeunt ab eodem procedere principio, sed exigunt principia sibiipsis proportionata, sicut effectus haberi nequit absque causa adæquata; *atqui* in corporibus exhibentur proprietates oppositæ, quarum aliæ requirunt principium passivum, aliæ vero principium activum, quæ principia scholastici vocant *materiam primam* et *formam substantialem.*

Prob. min. 1°. *ex proprietatibus physicis.* Corpora, ex una parte, prædita sunt *multiplicitate* et *divisibilitate ;* corpus enim natura sua habet partes diversas et ab invicem separabiles. Ex altera autem parte, corpora prædita sunt *unitate,* quum partes diversæ corporis in unum per se *(Ont.,* n. 283), et indivisum coeant; et *activitate,* quum mutuo se attrahant, repellant, dissolvant. Quæ proprietates postulant in corpore principia opposita ad invicem conjuncta.[1]

[1] In every material substance there are found two series of properties which are antagonistic in nature and point to a duality in the composition of the substance itself. Thus, ex. gr., we find *quantity* and *quality, permanence* and *change, inertia* and *energy.* The inference, therefore, is made that a substance is a compound whole, constituted by the intimate union of *first matter* and of *form.* The *first matter* is the source of quantity, of permanence and of inertia; the *form* is the source of quality, of change and of energy. The *first matter* is the same throughout the visible universe, the *form* is specifically different, and by its union with first matter constitutes a specific type of existence with its specific qualities and energies — (**Driscoll,** *The Soul,* p. 186).

2°. *Ex proprietatibus chimicis*. Atomi specifice differunt *(a)* proprietatibus *passivis* ponderis atomici et valentiæ seu atomicitatis, quæ est capacitas atomi unius speciei ad unionem cum alia vel aliis alterius speciei *(v. g.,* atomus oxygenei est capax unionis cum duabus atomis hydrogenei); et *(b)* proprietate *activa* affinitatis chimicæ, quæ est atomorum vis electiva et principium dirigens reactiones chimicas. Hæ iterum proprietates exigunt in corporibus principium passivum et principium activum, seu, materiam primam et formam substantialem[1]. *Ergo.*

III. — Pro constitutione corporis anorganici ex duplici principio substantiali eadem ratio valet ac pro constitutione corporis organici, quum materia prima homogenea sit in omnibus, ac iisdem instruatur proprietatibus; immo corpus quod prius fuit organicum, postea fit anorganicum, et vicissim. *Atqui* corpus organicum, speciatim corpus humanum, ut postea ostendetur, intrinsece constituitur materia prima et forma substantiali; *ergo* ex eodem duplici principio corpus anorganicum constitui dicendum est. Ad rem Suarez: « Homo constat forma substantiali ut intrinseca causa; *ergo* et res omnes naturales. Nam anima rationalis substantia est, ut patet, quia per se manet separata a corpore. Rursus illa anima est vera forma corporis, ut Fides docet, et est etiam evidens lumine naturali. Est ergo hæc anima substantialis forma; nam nomine sub-

[1] The best known chemical properties are chemical affinity, atomicity, and atomic weight. Chemical affinity, is evidently a force, because it is a cause of action. It is the deepest and noblest force of the body, because its action has a most direct and an absolutely decisive influence on its very nature, as it is selective in its object. Consequently, it is in the affinity of the body that we possess the most obvious expression of its finality, and the clearest indication of the orientation of its activity. This consideration is sufficient to show that it must have its source and seat in the forma substantialis, the active and specific principle of the body.

Atomicity and atomic weight are not forces, they are but the condition and measure of the chemical affinity and of the quantity of the body, respectively. Hence, the atomicity must be considered as having its root and basis in the forma substantialis, whereas the atomic weight is based on the materia prima — (Baschab. *Manual of Neo-Schol. Phil.*, p. 48).

stantialis formæ nihil aliud significatur, quam substantia quædam partialis, quæ ita potest uniri materiæ, ut cum illa componat substantiam integram ac per se unam, qualis est homo. . . Hominis igitur compositio ex materia et forma substantiali ostendit esse in rebus naturalibus quoddam subjectum naturale natura sua aptum, ut informetur actu aliquo substantiali » (*Meta.* Disp. 15, s. 1, n. 6).[1]

[1] Hoc argumentum refellere conatur *Tongiorgi* (Cosm., p. 221), negando paritatem inter animam humanam et formas inferiores. Est igitur operæ pretium exscribere præclaram argumenti expositionem, quam affert Harper (v. ii., p. 427): « If there be any parity between the human soul and the other substantial material forms which, according to the peripatetic philosophy, constitute and essentially complete all bodily substances, it is plain that we must seek for the parity — not in the part (so to speak), or in those faculties of the human soul which transcend all capacity of matter and are independent of it — but in that part, or in those faculties which are dependent on matter, and can only energise by means of some particular organ of the body. For this reason we are bound to leave entirely out of consideration the intellectual and volitional faculties, which are purely spiritual and independent of the body, and to concentrate our attention on those vegetative and animal faculties that are dependent on matter, and can only operate through some bodily organism. Is there, then, a clear parity between the soul and other material forms of material substances, when the former is thus contemplated? The parity can hardly be more complete. The origin, growth, nutritive process of the human embryo are identical with those of other living substances. In other words, the vegetative life of man is precisely similar to that of a plant or of an irrational animal. Similarly, the sensitive life in man exhibits identically the same generic type as that to be found in other animals. There are the same senses and the same organs of sense; and the same cerebro-spinal system, which is the citadel of the motor and sensory nerves, is common to man and the skulled vertebrates. . . . Furthermore, there is a striking analogy between the human soul and the substantial forms of other animals under another aspect. As all purely animal forms embrace the functions of vegetative life which are eminently included in it; in like manner the human soul eminently embraces in its entity the faculties and functions of both vegetative and sensitive life. Thus at length it will be clearly seen that the parity disputed by the present objector extends to all living things — to the vegetable no less than to the animal world. But can the parity be fairly extended to inanimate bodies? Let us see. A just distinction has been drawn between animals and plants, to the effect that the latter absorb inorganic substances and transmute them into organic, while the former absorb organized substance and provisionally resolve it into inorganic. Since the animal either immediately or mediately receives its

Valor argumentorum. Non una est mens auctorum circa validitatem argumentorum, quæ ad hanc thesim probandam afferri solent. Aristoteles, S. Thomas omnesque scholastici antiqui arg. ex mutationibus substantialibus desumptum ut principale habebant, et ut tale adhuc a pluribus habetur, secus ac ab aliis, juxta quos, illud non debet adhiberi; sive quia, ob difficultates sane graves contra illud allatas, id incertum esse putant, (cf. *Lemaire,* supra, p. 153), sive quia, « etsi omnino certum, est potius conclusio quam præmissa nostræ thesis» *(Monaco,* Cosm., p. 71). Argumentum ex proprietatibus *Nys* rejicit ut invalidum *(cette preuve nous paraît peu convaincante, et même en désaccord avec l'expérience),* et unum tantum arg., scil., ex intrinseca rerum materialium finalitate, ut ex omni parte certum agnoscit *(preuve complète et péremptoire).*

Ex eo, quod corpus sit continuum, seu unum actu et multiplex potentia, *Decoqs* infert in eo haberi duo principia realiter distincta, alterum forma substantialis, alterum materia prima[1]. Hoc solum argumentum esse conclusivum declarat, quod et *Geny* habet ut « pienamente efficace », æque ac arg. ex mutatione substantiali *(notam,* p. 164).

Nec desunt, qui nitantur thesim probare *a priori,* quia, inquiunt, *actus nequit limitari nisi per potentiam subjectivam*: id, quod

nourishment from vegetable substance which has itself been nourished by inanimate bodies, and since in the process of animal digestion the organic substance is resolved into its constituents, it is evident that the same inanimate bodies pass into vegetable, and thence into animal substances, and after this often repass, more or less, into their primitive constitution. By the process of absorption they lose what may be metaphysically called their independence, and become partial elements contributing to the substantial nature of a plant and afterwards of an animal. Thus, speaking again metaphysically, they part with their complete substantiality, and become subordinate constituents of another substance. What is the real meaning of all this material interchange? Surely, if there exists in the material order a union so intimate between inanimate and animate bodies, so that the constituents of organised substance can be chemically reduced to these simple bodies, or elements, which modern chemistry has accepted as such: this fact affords grave reason for concluding that, in their essential constitution, inanimate are substantially constituted in the same way as living bodies. If they can accommodate themselves so easily to the substantial forms of a plant and of an animal, it would be strange if they had not originally a substantial form of their own, which they resume when they are again isolated ».

[1] Notre argument. . . établit que l'être continu et quantitatif exige un principe *radical* d'étendue et un autre d'unité *(Essai,* p. 266). Le *principe* du « multiple en puissance », c'est ce que nous appellerons la *materia prima;* le *principe* de « l'un en acte », c'est ce que nous appellerons la *forme (ib.,* p. 244).

sane haud certum est, ut ostendimus in *Ont.* (n. 337. obj. 7). «Quinimmo advertimus revera neque S. Thomam neque antiquiores thomistas unquam hoc argumentum protulisse ad hanc thesim probandam. Unde non immerito videmur inferre posse, neque Angelicum Doctorem, neque principes thomistarum retinuisse principium illud tam certum ac tam fundamentale, uti recentissimi quidam scholastici comminiscuntur; secus enim intelligi nequit, cur S. Doctor, qui semper curat afferre argumenta metaphysica, illud in hac questione penitus omiserit. Ac proinde hoc saltem uti certum asserendum videtur, principium illud circa actus limitationem nullo modo esse fundamentale in doctrina et in toto systemate S. Thomæ, quum certissimum omnino sit, S. Thomam nullo modo in eo fundasse doctrinam de intrinseca constitutione corporum, quæ magnam constituit sui systematis partem» (**Monaco**, *Cosm.* p. 72).

129. Schol. De concordia inter systema scholasticum et scientias naturales. Sæpe objicitur systema scholasticum pugnare vel saltem non posse amice reconciliari cum scientiis naturalibus. «Inter physicorum dogmata (ait **Tongiorgi**) et peripateticam theoriam tanta est oppositio, ut physicorum dogmatibus receptis, illico tota peripateticorum theoria corruat, et vicissim qui hujusmodi theoriam amplectitur, ea dogmata respuat necesse sit» *(Cosm.,* p. 215). Sed imprimis, scientiæ naturales supponunt substantiam corpoream jam constitutam; unde, cultor scientiæ naturalis, nisi extra ambitum suæ scientiæ excurrat, potest et quidem debet, in suis ratiociniis a quæstione de ultimis corporum principiis penitus abstrahere.[1] Hac igi-

[1] Cette théorie (i.e., *scholastica)* ne renferme rien que les sciences expérimentales puissent contredire. La physique, d'abord, est hors de cause, car elle a pour objet les propriétés générales des corps, et non leur constitution. D'autre part, en chimie, la limite extrême de l'analyse est l'atome. Or, si l'atome échappe à toute analyse réelle, l'analyse rationelle y découvre fort bien deux éléments: l'un *quantitatif* et l'autre *qualitatif*. Le premier est passif, le second est actif. A cause du premier, l'atome est étendu et pondérable; grâce au second, il a des propriétés spécifiques, qui le distinguent de tout atome d'une autre nature.

En biologie, la limite extrême de l'analyse réelle est la cellule vivante. Or, dans toute cellule vivante, l'analyse rationnelle découvre un principe de vie et une matière vivifiée par ce principe. En cette question de la composition des corps, la métaphysique et les sciences expérimentales se rencontrent, mais elles ne sauraient se combattre. Leurs points de vue ne sont pas les mêmes: au point

tur ex parte negandum est existere dissidium inter hylomorphismum et scientias naturales. Præterea, certum esse videtur nullum factum *indubium* proferri posse, quod irreconciliabile sit (ne plus dicatur) cum doctrina scholastica prout supra propugnata. Et speciatim, quod attinet ad scientiam chimicam, inter ejus asserta hæc tamquam certissima recensentur: – 1°. Pondus materiæ in composito ad amussim respondet ad pondus elementorum, quibus constat. 2°. Non omnia elementa coeunt cum omnibus aliis; nec in formatione compositi combinatio fit utcumque, sed secundum definitas proportiones. 3°. Simplicia manent in composito et ope analysis chimicæ exinde resolvi possunt juxta easdem proportiones, quibus ad illud constituendum coierunt. 4°. In composito remanent affinitates simplicium. Jamvero, nullum ex his factis pugnat cum hylomorphismo, immo ipsa eum potius confirmant. Nam, 1°. Passivæ corporum proprietates (ut *pondus, quantitas, inertia)* sequuntur materiam primam; quum igitur materia prima numquam desinat, sed modo sub formis simplicium, modo sub forma compositi existat, necesse est, ut, sicut tota materia elementorum fit materia compositi, pondus hujus illorum ponderi æquivaleat. 2°. Diversæ elementorum affinitates ac diversæ proportiones, secundum quas fiunt combinationes, manifeste supponunt in elementis præter principium passivum, aliud principium activum, specificativum, formativum. 3°. Quantum ad permanentiam elementorum in composito, nihil refert scientiæ chimicæ quomodo contineantur, formaliter nempe an virtualiter. Nec desunt chimici, qui, licet theoriam atomisticam admittant, *formalem* tamen atomorum existentiam tamquam *mentis fictionem* habent. Possunt igitur chimici suas observationes prosequi, nulla habita ratione modi, quo elementa in composito existant.[1]

de vue expérimental, la cellule et l'atome sont des limites; au point de vue métaphysique ils sont des points de départ — (Dagneaux. *Hist. de la Phil.,* p. 483).

[1] Whether the oxygen and hydrogen exist, *as such*, in the water, or whether they are produced by some unknown and unconceived

Nec objiciendum est formulas, quas adhibent chimici, satis aperte ostendere elementa ex mente eorum *actu* in composito existere. Nam hæ formulæ *(v.g.,* H_2O=aquæ), fatentibus ipsis chimicis, non indicant elementa, ex quibus compositum prodiit, actu in ipso contineri, sed indicant ex his elementis compositum coaluisse et ipsum in eadem elementa iterum posse resolvi.

4°. Affinitates, sicut ipsa elementa, *virtualiter* manent in composito, et proinde non prius se manifestant quam fit compositi resolutio, quando nimirum elementa actu existere incipiunt. Nam, composito resoluto, elementa redeunt cum propriis suis proprietatibus activis et passivis.

Dices: Hylomorphismus non concordat cum phænomenis radioactivitatis; ex his enim phænomenis physici concludunt elementa corporum constare ionibus et electronibus vel cum atomis ætheris conjunctis vel omnino sine massa materiali existentibus.

Resp. Dato quod elementa ita existunt, non idea hylomorphismus labefactatur, sed potius confirmatur, quum per corpuscula ejusdem naturæ haud explicari possit differentia *specifica,* quæ existit inter elementa diversa;

transformation of its substance, is a question about which we may speculate, but in regard to which we have no knowledge. All we know is that the change of water into two gases, or of the two gases into water, is attended with no change of weight, and hence we conclude that in the change the material is preserved — (**Cooke,** *op. cit.,* p. 116).

« Nihil scitur (ait *Liebig)* relate ad statum, in quo elementa duorum corporum compositorum versantur, simul atque illa in chimicam combinationem coaluerunt; et quomodo elementa in combinatione cogitanda sint, *stat in conventione,* » i.e., penitus ignoratur, et solum conventionalibus quibusdam loquendi formulis exprimitur. Idem omnino persuasum habuisse dicendus est *Reculé,* cum hæc scripsit: chimica est « scientia corporearum transformationum materiæ. Objectum ipsius essentiale non est substantia *prout actu existens,* sed potius ipsius *status præteritus et futurus.* Relationes corporis ad id, quod fuit prius, et ad id, quod fieri potest, constituunt proprium objectum chimiæ. » Excessit ergo in suo judicio, vel ex ipsorum chimicorum sententia. *Frédault,* cum asseruit incorruptibilitatem elementorum in compositis esse *factum,* ideoque discussioni et controversiæ minime obnoxiam — (**Urráburu,** *Cosm.,* p. 483).

ad hanc enim differentiam explicandam admitti debet principium specificum *(formæ)*, quod determinet corpuscula, ut hoc vel illud elementum constituant.[1] Deinde de corpusculis recurrit quæstio, num habeant quantitatem necne. Si non, impares sunt, ut elementa vel corpora constituant; si vero quantitatem habent, habent et partes extra partes simul unitas, et proinde postulant principium multiplicitatis partium et principium unitatis inter partes, i. e., *materiam primam* et *formam substantialem* (n. 128).[2]

Hæc sufficiant ad hylomorphismum stabiliendum, et ad ostendendum nullam esse oppositionem inter eum et scientias physicas et proinde summa injuria dicitur neminem eum amplecti posse, quin dogmata physica respuat. Potius « pro ea, qua nostra ætas pollet, rerum naturalium peritia, tamquam hypothesis omnium optima est » (cf. p. 163).[3]

[1] When a theory — a philosophical theory — shows itself adaptable to the newest discoveries of science — when, still more, it may be looked upon, without any straining of facts, as having actually predicted those discoveries, or preconceived them, if that word is to be preferred—then indeed we have every reason to feel that our confidence in the accuracy of that theory is greatly increased by the remarkable similarity which has been seen to exist between the theory of matter and form and the electrical theory of matter as now widely taught — (**Windle**, *The Church and Science*, p. 94).

[2] Although recent research has greatly increased our knowledge, it has not by any means solved the question of the constitution of matter. The atom has not been resolved into positive and negative electricity, but into electricity and matter. The atomic nucleus is not a combination merely of electrons. It is a combination of electrons with ions, which have a definite mass and all the qualities of matter. The proton or ion of hydrogen still remains unresolved, and it is matter. Science has shown that matter possesses an inherent positive charge of electricity, and that its normal electrically neutral state is due to a combination of this particle of positively charged matter with an electron whose electricity is always negative — (**Browne**, *I. E. Record*, July, 1926. p. 42).

[3] Professor Nys, after a careful examination of the various departments of physical science at its present stage of development, has reached a conclusion well calculated to give pause to modern philosophers: the conclusion — which he embodies and supports in his *Cosmologie* – that no hypothesis of the present day has a better interpretation of the facts of physical nature to offer

COSMOLOGIÆ PARS TERTIA.

De Legibus Naturæ et de earum Derogatione.

130. Totus mundus constituit magnum systema, cujus partes inter se colligantur secundum quosdam stabiles et uniformes agendi modos, qui *leges naturæ* vocantur, quique vel promanant ex essentialibus corporum proprietatibus (ut leges, quibus reguntur chimica synthesis et analysis corporum) vel corporibus jam constitutis superveniunt, *v. g.*, collocationes et motus corporum ad systema solare pertinentium. Illæ *essentiales,* hæ *accidentales* vocari possunt. Suprema autem et universalissima lex na-

us than scholasticism has. How, for example, are we to account for chemical affinity, or for the constant recurrence of the same chemical species in nature, without appealing to a finality that must be intrinsic to the constitution and activities of those species? Is not the great law of crystallography — that «each chemical species has its own characteristic crystalline form» — a faithful expression of the scholastic principle that in the inorganic world there are specific types which exhibit distinctive and inalienable properties? In general, does not an impartial study of the facts of general physics point unmistakably to the existence of *qualities* in the Thomist sense of the word? . . . There is, no doubt, a seductive charm in the very simplicity of the atomic hypothesis, which would reduce the matter of the whole visible universe to one homogeneous mass, and the vast and ever varying panorama of its manifold activities to simple local motion. But it would appear that the explicative or interpretative value of the theory must be very considerably discounted. Apart altogether from the philosophical presuppositions, which, as can be easily shown, are not entirely free from latent contradictions and inconsistencies, there are in chemistry, physics, and mechanics, certain facts, such as the constancy of the thermal phenomena that accompany chemical changes, the phenomenon of universal gravitation, and the fact of the conservation of energy, with which the mechanical atomism — so far from explaining them — turns out on critical analysis to be really incompatible. And these failures are felt all the more keenly as natural science progresses. So much so, that they have occasioned among certain men of science — who are also betimes philosophers, and, indeed, necessarily so, we would say, judging from their vast and varied knowledge — a movement of reaction against atomism. . . . Take, for example, these frank and significant declarations of Prof. Duhem, of Bordeaux: «The attempt to reduce all

turæ est, ut res creatæ a suo Creatore et Rectore dependeant eique obediant. Unde, hanc partem dividere oportet in duo capita, quorum primum agit de legibus generalibus quibus mundus corporeus regitur, alterum vero discernit, num effectus ex hisce legibus derogantes dari possint.

CAPUT PRIMUM.

De Legibus Naturæ.

ART. I.

Notiones Præliminariæ.

131. Notio Legis. Lex, ut docet **S. Thomas,** *est quædam regula et mensura, secundum quam inducitur aliquis ad agendum vel ab agendo retrahitur,* (1. 2, q. 90, a. 1).

Dicitur 1°. *regula,* quia lex eo tendit, ut præscribat et quasi mensuret quid sit faciendum, quid omittendum.

Dicitur 2°. *secundum quam inducitur aliquis,* quia nullum ens potest legem sibi imponere, sed opus est, ut ab alio imponatur; proinde lex *active* seu prout est in regulante, et *passive* seu prout est in regulato, considerari potest. Lex, *active* sumpta, est dictamen rationis præscribentis normam agendi; accepta autem *passive,* est hæc norma applicata eis, qui legi subduntur. Quod ad legem *physi-*

the properties of bodies to figure and movement must be a futile undertaking, because not only would it involve unmanageable if not unimaginable complications, but—what is far worse—it would be grossly incompatible with the nature of material things. We are simply compelled, therefore, to admit into our physics something else in addition to the purely quantitative elements of which geometry treats; we must allow that matter has qualities. Even at the risk of being reproached for returning to the old *virtutes occultæ*, we feel ourselves forced to regard as a primary and irreducible quality that by which a body is hot, or bright, or electric, or magnetic; in a word, we must abandon the conceptions and hypotheses that scientists have been making and unmaking, in the spirit, and since the time, of Descartes, and begin to attach our theories to the fundamental conceptions of the peripatetic physics » — (**De Wulf-Coffey,** *Scholasticism Old and New,* p. 226).

cam attinet, lex *active* sumpta est lex æterna, quæ est « *ratio divinæ sapientiæ, secundum quod est directiva omnium actuum et motionum* » (S. Th., 1, 2, q. 93, a. 1). Hanc legem æternam existentem in mente divina, sicut in regulante, res creatæ, unaquæque secundum propriam suam naturam, participant, « in quantum scilicet ex impressione ejus habent inclinationes in proprios actus et fines» *(ib.* q. 91, a. 2). Et ideo dum entia rationalia legem æternam participant *cognoscitive,* quatenus apprehendunt, quid se oporteat facere aut non facere; entia irrationabilia, quum naturam præcepti intelligere nequeant, eam, non cognoscitive, sed *naturaliter* participant, quatenus natura sua inclinantur ad unum illumque constantem modum agendi. Nam « sicut homo imprimit denuntiando quoddam interius præceptum actuum homini sibi subdito, ita etiam Deus imprimit toti naturæ principia propriorum actuum; et ideo per hunc modum Deus dicitur præcipere toti naturæ secundum illud *(Psalm.* 148): *Præceptum posuit et non præteribit.* Et per hanc etiam rationem omnes motus et actiones totius naturæ legi æternæ subduntur » *(ib.,* q. 93, a. 5).[1] Unde, lex *physica* vel *naturæ* haud distinguitur a ' principiis actuum rei creatæ ' *(i.e.,*

[1] The one Eternal law embraces all the laws of creation. It has a physical and moral side. On the former it *effects,* on the latter it *obliges,* but on both sides it is imperative; and though in moral matters it be temporarily defeated by sin, still the moral behest must in the end be fulfilled as surely as the physical behest. The defeat of the law must be made good, the sin must be punished. . . . It is important to hold this conception of the Eternal law as embracing physical nature along with rational agents. To confine the law, as modern writers do, to rational agents alone, is sadly to abridge the view of its binding force. The rigid application of physical laws is brought home to us by science and by experience. . . .

It is hard for us to conceive of laws being given to senseless things. We cannot ourselves prescribe to iron or to sulphur the manner of its action. As Bacon says: «Man can only put natural bodies together or asunder: nature does the rest». That is, man cannot make the laws of nature: he can only arrange collocations of materials so as to avail himself of those laws. But God makes the law, issuing His command, the warrant without which no creature could do anything, that every creature, rational and irrational, shall act according to its kind or nature. Such is the Eternal law— **(Rickaby,** *Moral Phil.,* p. 131).

a rei creatæ natura) et definiri potest : *inclinatio* vel *determinatio ad constantem et uniformem modum agendi rebus corporeis ab auctore naturæ impressa.* Quum autem causæ et effectui idem nomen sæpe tribuatur, ipse uniformis modus agendi solet vocari *lex physica.*[1] Illa namque inclinatio naturalis est proxima et objectiva ratio hujus constantiæ et uniformitatis.

Vox «naturæ», quæ multiplicem habet significationem, sensu stricto intelligenda est, quando agitur de *legibus naturæ,* nimirum pro intrinseco ac radicali principio, quo unumquodque ens in suis motibus dirigitur in suum proprium finem. Hæc est natura *particularis,* quæ proinde multiplex est pro multiplici rerum specie. Quum vero naturæ particulares ita inter se colligentur, ut in bonum totius universi, tamquam in finem communem, semper conspirent, mens sibi efformat conceptum naturæ *universalis,* quæ est *universitas rerum materialium, quatenus activitate sua ad finem communem tendunt.*

132. Ordo naturæ. Illa apta dispositio rerum, qua in finem communem conspirant, dicitur *ordo naturæ :* uniformis vero successio effectuum juxta leges physicas dicitur *cursus naturæ.*

Ex apta dispositione rerum duplex enascitur ordo mundanus, *scil.,* 1°. ordo *teleologicus* seu ex fine intento proficiscens, quo partes inferiores ad invicem et ad finem superiorem ordinantur, ita ut bonum uniuscujusque partis conferat ad bonum aliarum partium, et bonum omnium partium ad bonum universi, necnon malum unius partis conjungatur cum bono alterius et ultimatim totius ordinis mundi. Sic, *v.g.,* elementa contribuunt ad bonum com-

[1] The laws of nature are nothing but the tendencies to a determinate, constant method of activity implanted by the Creator in the nature of things, or the unvarying, homogeneous activity itself which is the effect of this tendency. The word *law* is used in this latter sense when it is asserted that a natural law has been changed or suspended by a miracle. For the miracle does not change the nature of things or their constant tendency; the Divine power simply prevents things from producing their natural effect, or uses them as means to attaining an effect surpassing their natural powers — (**Cathrein.** *Cath. Encycl.*, v.ix., p. 53).

positi, mineralia ad bonum vegetalium, vegetalia ad bonum animalium, animalia simul cum reliqua natura irrationali ad bonum hominis. 2°. ordo *unitatis,* quo omnes res mundanæ ab infimis speciebus ad supremas aliqua attributa in communi habent. *V. g.,* mineralia, plantæ, bruta, homines *(i. e.,* omnes res mundanæ) in communi habent naturam corpoream, et ea, quæ naturam corpoream sequuntur; species superiores complectuntur proprietates et perfectiones specierum inferiorum, quibus quæque superaddit suam notam distinctivam. Porro, existit universalis attractio inter omnia corpora cælestia, quum planetæ gyrentur circa solem, sol autem et planetæ versus stellam Lyram ferantur; Lyra vero circa aliquod centrum attractionis moveri videatur. Ex hac universali colligatione oritur *unitas mundi,* quæ quidem est unitas mere accidentalis et extrinseca, in eo sita, quod corpora omnia ob ordinem inter ea vigentem constituunt aliquod totum, in quo unumquodque in suum finem connaturalem tendit.

133. A legibus naturæ diversis pro diversis corporum speciebus distinguendæ sunt leges, quas *cosmicas* seu *providentiæ* nominant, quæque exhibent modum constantem, quem servat Auctor naturæ in rebus *omnibus* gubernandis (cf. *Tongiorgi, Cosm.,* p. 390). Hæ sunt: —

1°. *Lex utilitatis,* quæ exhibetur axiomate: *natura nihil agit frustra;* quod constat ex conceptu divinæ sapientiæ.

2°. *Lex mediorum naturalium,* i.e., quæ per causas naturales fieri possunt, Deus immediata sua actione non facit; res enim viribus ad earum finem connaturalem assequendum adaptatis donavit, quæ vires essent frustra si Deus, ea, quæ per causas secundas fieri possunt, ipse faceret.

3°. *Lex constantiæ,* i. e., leges naturæ semel constitutæ non immutantur, seu, in iisdem adjunctis corpora eodem modo agunt et patiuntur.

4°. *Lex parsimoniæ,* i.e., natura non facit per plura, quod potest facere per pauciora. Cui affinis est *lex simplicitatis,* i.e., inter plures leges factum explicantes, ea, quæ est objective simplicior, admittenda est.

5°. *Lex continuitatis,* quam *Leibnitz* sic exprimit: *natura*

non facit saltus, i.e., natura in suis operationibus per gradus insensibiles procedit ab imperfectioribus ad perfectiora. Qua lege abutuntur evolutionistæ, quando contendunt entia superiora ab inferioribus gradatim evoluta fuisse. Verum sensum sic exponit S. Thomas: «Mirabilis rerum connexio considerari potest. Semper enim invenitur infimum supremi generis contingere supremum inferioris generis; sicut quædam in genere animalium parum excedunt vitam plantarum, sicut ostrea, quæ sunt immobilia et solum tactum habent et terræ modo plantarum affiguntur» *(C. Gent.,* lib. 2, c. 68).

ART. II.

DE REALITATE LEGUM PHYSICARUM.

134. THESIS XVII. Existunt leges physicæ proprie dictæ, quæ ut constantes et universales certo cognosci possunt.

Stat. Quæst. Nemo nisi scepticus negare aut in dubium vocare potest existentiam legum, secundum quas phænomena sensibilia reguntur, siquidem in his legibus investigandis scientiæ naturales maxima ex parte occupantur. Attamen non pauci harum scientiarum cultores, dum has leges ore tenus admittunt, revera eas funditus evertunt statuendo principia, quibuscum earum realis existentia consistere nequit. Quos inter primum locum obtinet *J. S. Mill,* qui fundamentum legis causalitatis, cui inniti omnem inductionem omnemque legem naturæ ultro fatetur, in experientia sola consistere autumat. Exinde concludit nos nullam certitudinem habere posse de principio causalitatis, et proinde de constantia legum physicarum in regionibus, quæ experientiæ nostræ non subjiciuntur.[1]

[1] En ejus verba: «The uniformity in the succession of events, otherwise called the law of causation, must be received not as a law of the universe, but of that portion of it only which is within the range of our means of sure observation, with a reasonable degree of extension to adjacent cases. To extend it further is to make a supposition without evidence, and to which, in the absence of any ground from experience for estimating its degree of probability, it would be idle to attempt to assign any»—*(Log.*, v. ii., c. 21, ad fin.).

« Ad scepticas has theorias refellendas, necesse sane non est, ut cum Reidio aliisque e Scotica schola philosophis, ad naturalem instinctum atque ineluctabile imperium, tamquam ad extremam in naufragio tabulam confugiamus; suppetunt enim humanæ menti evidentia principia atque in promptu posita, quibus tota hæc quæstio facile dirimitur. Dixi *principia;* quod est sedulo notandum. Radix enim erroris hujus, ut et aliorum plurimorum, est vulgaris ille Lockii empirismus, qui omnia ab experientia repetit, et totam in sensibus philosophiam demergit » (**Tongiorgi**, *Cosm.*, p. 395).

Leges physicæ propric dictæ intelligendæ sunt leges essentiales (n. 130).

135. Prob Thesis. Pars 1ª. *(existunt leges naturæ).* **Arg.** — Si existit in rebus mundanis uniformis successio effectuum in ipsis rerum naturis fundata, existunt etiam leges physicæ proprie dictæ; hæc enim successio non est nisi legum physicarum actuale exercitium seu cursus naturæ. *Atqui* prædicta successio existit; *ergo.*

Prob. min. Ex fine, in quem tendunt operationes rerum naturalium, optime dignoscitur harum operationum principium; finis enim est mensura rei et omnium, quæ eidem rei naturaliter competunt; qualis igitur finis, talis operatio, qualis operatio talis natura seu principium operationis.[1] *Atqui* finis proximus, in quem tendunt operationes rerum naturalium, est propria harum rerum perfectio; ad hunc namque pervenire nituntur et sæpissime perveniunt superando influxus externos, qui eis obsistunt. Finis autem

[1] In general, end and nature define each other. . . Given the nature of a thing, we can determine its end or object. On the other hand, end determines nature. Nothing is commoner than to define a thing by the end it is meant to serve. . . And even when we do not know the nature immediately, we can often tell to a large extent, what the nature must be from the mere conception of end. Did I know, for instance, the end of a camera — that a camera was meant to reproduce the forms or surfaces of natural bodies — then, provided I know fully the laws of perspective, I should be able to tell also the form which the camera should take before it could reproduce these surfaces — (**Cronin**, *The Science of Ethics*, v. i., p. 126).

remotus, in quem operationibus suis conspirant res naturales est perfectio et pulchritudo totius mundi. Jamvero, hæc omnia manifeste indicant inditas esse rebus naturalibus quasdam inclinationes fixas ad certos effectus producendos ; *atqui* hujusmodi inclinationes sunt leges physicæ proprie dictæ ; *ergo*.

136. Pars 2ª. *(quæ ut constantes et universales certo cognosci possunt)*. **Arg. I.** – Ratio præcipua, cur empiristæ negent constantiam et universalitatem legum physicarum certo cognosci posse, vel inde derivatur, quod omnem causalitatem reponunt in mera successione phænomenorum absque ullo interno nexu cognoscibili inter phænomenon antecedens et consequens;[1] vel ex eo, quod putant omnem nostram cognitionem esse sensibilem et proinde impotem ad notionem legis constantis et universalis attingendam ; *atqui* causalitatem non consistere in mera phænomenorum successione experientia et ratione comprobatur *(Ont.,* n. 425); cognitionem sensibili altiorem nos habere, cuique testimonio conscientiæ fit evidens (quando, *v.g.,* cogitat de spiritu, de circuli rotunditate) et nullo negotio probatur in *Psychologia ; ergo*.

II. – Identitas naturæ specificæ plurium individuorum expostulat specificam identitatem virium et inclinationum horum individuorum ad quosdam determinatos fines; vires enim et inclinationes tamquam proprietates e natura emergunt eamque ubique comitantur. Omnia igitur individua ejusdem speciei sive præterita sive præsentia sive futura,

[1] For Hume causality is no more than a relation between ideas. It is not an ***a priori*** relation; «but arises entirely from experience, when we find that any particular objects are constantly joined with each other. However, we can never apprehend any force or power, by which the cause operates, or any connexion between it and its supposed effect. . . So that, upon the whole, there appears not, throughout all nature, any one instance of connexion, which is conceivable by us».

Mill explains causality as uniform antecedence, the growth of human experience, and not to be extended beyond the realm of experience. «In distant parts of the stellar regions», he writes, «where the phenomena may be entirely unlike those with which we are acquainted, it would be folly to affirm that this general law prevails» — (**Aveling,** ***Cath. Encycl.,*** v. iii., p. 464).

easdem vires et tendentias naturales habere necesse est. Jamvero, quum res corporeæ non sint liberæ, sed natura sua ad stabilem ac determinatum modum agendi ordinem habeant, vires et tendentiæ naturales semper et ubique impellunt hæc individua ad unum et eumdem modum agendi; *atqui* hoc perinde est ac dicere leges naturæ esse constantes et universales et ut tales a nobis cognosci posse; *ergo*.

137. Cor. Ergo leges physicæ absque fine naturæ præfixo seu absque ordine teleologico in natura existente cogitari nequeunt; hæ enim leges vires naturales certo ac determinato modo dirigunt; hoc autem non aliud est quam eas in ratum finem dirigere. Si ergo leges naturæ existunt, existunt pariter fines proximi ac demum finis ultimus, quo res naturæ suis operationibus tendunt. Sibi ipsi igitur contradicunt, qui, dum leges physicas admittunt, immo et extollunt, ordinem teleologicum, quo res ex necessitate suæ naturæ insita in finem præfixum tendunt, denegant. Nam, si res naturæ constantem et uniformem aptitudinem exhibent ad aliquem finem consequendum, ratio cogit, ut dicamus hanc aptitudinem esse eis inditam propter hunc finem, et quidem a causa, quæ finem ut finem et media ut ad finem proportionata cognoscit. Unde, conspiratio illa operationum rerum omnium naturalium in admirabilem ordinem, quem in mundo conspicimus, rationem sufficientem non invenit nisi in mente finem præfigente et res ex stabili et innata dispositione illuc dirigente. Contra, materialistæ omnia in mundo visibili ex necessitate mechanica repetunt, ideoque nullum locum intelligentiæ finem præfigenti et res ordinanti relinquunt.[1]

[1] The naturalist is not on the look out for purpose or design, as they lie beyond his horizon; but they grow out of his work as naturally as the fruit grows on the tree. Darwinism completely ignores final causes, but by its theory of adaptation it has, quite beyond its intention, rendered yeoman service to the doctrine of design. . .

It is idle to inquire whether the design in nature is real or a phantom that we have conjured up by reading our own thoughts into things. As empirical facts must be judged in accordance with

138. Schol. Supposita existentia rei naturalis instructæ diversis viribus, quibus suas actiones et effectus producat, non illico et absque ulteriori conditione prodeunt hæ

the laws of thought, the design must be real. Look where we will, the star of purpose is in the ascendant. It lights up the beauteous structure and harmony of the heavens, the ingenious contrivances by which animals and plants feed and propagate themselves, and the world of wonders that the telescope discloses in the firmament, ant the microscope in every speck of matter. Through all nature there shines a purpose of dazzling brilliancy, beside which art is as a rushlight compared to the sun. Aristotle had endeavoured to clothe this truth with light. The human mind being an orderly faculty is bound to unravel this riddle. At all times nature intends the best. All that is most perfect and answers the purpose, she utilizes; all that is purposeless and useless she rejects. She has, moreover, the faculty of pressing things accidental into her service and assigning them a place in the world's economy. Nature's foresight proportions the parts to the whole, adjusts the relations between bulk and quantity, stocks the egg with food for the animal, provides the mother with milk, and implants in animals the impulse to rear their young. . .

The progress of discovery has tended to deepen this idea of purpose. . . The Copernican system set the unity and simplicity of the universe in a new light. The telescope revealed to the astronomer new worlds in the vast ocean of the heavens, new constellations in the nebulæ, new evolutions in the stars. From the spectroscope we learn that the unity of the system and of the moving forces is founded on the unity of the elements. The microscope showed a drop of water to be peopled with minute animalculæ, and gave geologists a clue to the formation of the rocks. Poets and religious writers admire nature; naturalists, by exploring the laws that govern great things and small, are nature's panegyrists. The works of Copernicus, Kepler, Galileo, Newton, Linneus, Cuvier, Alex. von Humboldt would form a bouquet of nature's choicest flowers. The hymn of praise which those men sang to the Creator of the universe added lustre and dignity to their pioneering efforts and set a consecrated seal on the work of their genius. . .

Many a poetic utterance has been choked by the scientific research into nature's phenomena; but nowadays the public ear is deaf to all things else. For we have no longer to deal with Ionian philosophers, who denied finality in nature, nor with Descartes and Bacon, who transferred it to a being outside the world. But our wrestling is with men of profound earnestness and immense industry, who strive to explain all finality in nature mechanically. Conscious purpose and design are to be superseded by an iron law of nature — a mechanical necessity determined solely by the forces of matter. Thus the universe is set down as a machine whose wheel and axle are ever revolving and working out their end by blind necessity — (**Schanz**, *A Christian Apology*, v. i., p. 233-235).

actiones et effectus connaturales. Nam omnis realitas creata, sive libere sive necessario operetur, indiget *(a) jugi Dei conservatione,* ut in esse perseveret, *(b) ejus concursu immediato,* ut activitatem suam exerceat. Unde, uniformis consecutio eventuum, quæ cursum naturæ constituit, nequit a causis naturalibus procedere, nisi Deus velit suum influxum conservativum et cooperativum præbere. Hoc autem minime obstat, quominus leges naturæ constantes et universales dicantur; nam Deus, quippe qui ordinem naturæ constituit, hunc concursum non negabit nisi aliqua ratio se digna interveniat, tum quia inconstantia non est sapientis, tum maxime quia sic natura corporea, quæ tota ordinatur in hominis utilitatem, non ei esset commodo, sed magno incommodo. « Fac enim dubiam esse legum naturalium constantiam; jam nulla foret experientiæ utilitas, nulla providentia futuri, nullus in humanis actibus ac relationibus ordo, nullumque certum concilium, sive parandis, quæ vitæ necessaria sunt, sive arcendis, quæ noxia, sive remediis adhibendis; omnia plena dubitationis essent, plena terroris; hominumque societas consistere non posset » (**Tongiorgi**, *Cosm.*, p. 397).

ART. III.

DE NECESSITATE LEGUM PHYSICARUM.

139. THESIS XVIII. — Leges physicæ non sunt absolute necessariæ, sed hypothetice tantum.

Stat. Quæst. Leges physicæ necessitatem imponunt agentibus, quippe quæ, ut experientia constat, necessario agunt, quando requisitæ conditiones adsunt. Quæritur igitur num hæc necessitas sit absoluta necne. « Affirmant Spinoza et pantheistæ, quibus quidquid in rerum natura evenit, aliud non est, quam necessaria et fatalistica evolutio unius substantiæ divinæ. Affirmant etiam deistæ, materialistæ, rationalistæ ac revelatæ religionis osores, qui ex hoc capite firmissimum argumentum ad miraculorum veritatem possibilitatemque impugnandam repeti posse arbitrantur. Sententia tamen catholicorum omnium

tenet leges naturæ non ita necessarias esse, ut in nulla hypothesi quidpiam fieri contra ipsarum normam valeat» (**Urráburu**, *Cosm.*, d. 375). Leges igitur naturæ sunt vere contingentes, licet hypothetice necessariæ dici debeant. Duplici autem sensu *contingentes* intelligi possunt hæ leges: 1°. *Quoad existentiam,* quia ipsæ ita existunt, ut possint omnino non existere; 2°. *Quoad operationem,* quia operationes, quas ipsæ dirigunt tales sunt, ut possint impediri, et ideo non repugnat, ut vires naturæ cum connaturalibus suis operationibus vel effectibus non sint conjunctæ. Hoc altero sensu contingentia legum naturæ usurpari solet.

140. Prob. Thesis. Pars 1ª. *(non sunt absolute necessariæ).* **Arg.** — Leges naturæ non sunt absolute necessariæ, si Deus efficere potest, ne vires rerum naturalium transeant in actum; *atqui* Deus hoc efficere potest. Nam imprimis nulla in hoc involvitur repugnantia; ex eo enim quod vires ex essentia rerum naturalium necessario resultant, sequitur quidem, posita essentia, existere vires et proinde aptitudinem essentiæ ad operandum quodam determinato modo; minime vero sequitur illas vires ab actu primo ad actum secundum tanta necessitate transire, ut non possint impediri. Jamvero, impediuntur *quoad operationem*, si Deus suam cooperationem deneget; impediuntur *quoad effectum* cum tali operatione naturaliter conjunctum, si subjecto, in quo actio virium recipi debeat, concursum ad hanc receptionem requisitum denegare velit. Quod utrumque Deus facere possit, debetur ejus supremæ independentiæ et supremo dominio in omnes res creatas omnesque earum operationes. Nam, sicut non necessario, sed libere res creavit et in esse conservat, ita non necessario sed libere cum eis concurrit in agendo et patiendo.

141. Pars 2ª. *(hypothetice necessariæ).* **Arg.** — Hypothetice necessarium dicitur illud, quod aliter se habere non potest, posita quadam conditione contingenti, quamvis aliter se habere potest, tali conditione non posita; *atqui* res naturæ, utpote in agendo determinatæ ad unum, posito

concursu divino, modo determinato agunt et quidem necessario. At Deus, quum non ex necessitate sed libere præbeat hunc concursum, potest ob rationes speciales illum omittere, vel talem alium præstare, qui res naturales inducat ad agendum aliter ac earum natura postulat. *Ergo* necessitas agendi, quæ rebus naturæ inest, est tantum hypothetica.

142. Cor. 1. Ergo leges naturæ sunt simpliciter contingentes. Nam quatenus res naturales in exserendo suas operationes pendent a conditionibus, quæ subtrahi vel mutari possunt, uniformitas et constantia, quas illæ in suis operationibus naturaliter exhibent, suspendi vel mutari possunt, quotiescumque decet divinam sapientiam ac providentiam. Nec ideo res finalitate destituuntur; nam etsi tunc suum finem particularem non consequuntur, tamen ratione talis suspensionis vel mutationis ordinem habent ad altiorem et quidem supremum finem totius universi.

Cor. 2. Ergo non repugnat, ut Deus agenti, cui naturaliter competit una operatio vel unus modus agendi, præstet vim et concursum ad aliter agendum. Quo in casu effectus, quem agens producit, diversus erit ab illis, quos producere solet cum concursu sibi debito in similibus adjunctis. Sic, « si igni Deus retraheret concursum ad comburendum, simulque vel impressa illi transeunter diversa virtute, vel si mavis, per solum extrinsecum concursum eo uteretur non ad comburendum, sed ad refrigerandum, nihil absurdum aut repugnans fieret. Ubinam enim est contradictio? an quia ignis in ea hypothesi combureret simul et non combureret, vel refrigeraret simul et non refrigeraret? Atqui ignis tunc non *combureret,* licet *exigeret* naturaliter comburere, et non *exigeret* naturaliter *refrigerare,* quamvis de facto per virtutem non sibi propriam, sed ex indebito dono superadditam *refrigeraret.* An quia virtus refrigerandi naturam ignis destrueret? Verum imprimis jam dixi, ut igne Deus uteretur ad refrigerandum, necesse non esse, ut eidem novam virtutem insereret naturali virtuti combustivæ contrariam, sed posse rem explicari per extrinsecum concursum, *scil.,* per actionem

refrigerandi, quam solus Deus ad præsentiam et contactum ignis efficeret. Deinde, non video, cur virtus refrigerandi transeunter impressa igni debeat *essentialiter* illum perimere. Nam non aliter profecto illum perimeret, nisi agendo in eum. Fac ergo Deum non concurrere cum illa virtute refrigerativa ad ignem extinguendum et nihil poterit huic illa nocere. Sicut etiam poterunt ignis et aqua frigidissima sese contingere, ac penitus incorrupta manere, *scil.*, si Deus mutuam inter eas actionem, retrahendo concursum, impediat » (**Urráburu**, *Cosm.*, p. 379).

143. Obj. 1. — Leges naturæ, quum a divina voluntate procedant, idem sunt ac divina decreta; ***atqui*** hæc sunt prorsus immutabilia; ergo etiam leges naturæ (Ita ***Spinoza).***

Resp. — ***Dist. maj.*** Leges naturæ sunt divina decreta proprie dicta, ***neg.:*** improprie dicta, ***i.e.,*** sunt objectum volitum per divina decreta, ***conc.*** Pariter ***dist. min.*** Divina decreta ***objective*** sumpta sunt immutabilia, ***neg.; subjective*** sumpta, quatenus sunt identica cum divina essentia, ***conc.*** Leges naturæ proprie dictæ sunt objecta decreta, et proinde haud secus immutabiles sunt quam ipse mundus, qui est etiam objectum divini decreti; nisi igitur cum pantheistis confundamus entitatem creaturæ cum entitate divini actus, leges naturæ vocari nequeunt Dei decreta.

Inst. — Leges naturæ eo, quod statuuntur divino decreto, nullam exceptionem admittere possunt.

R. — Nisi Deus eodem decreto, quo statuit ***generalem*** constantiam harum legum, decrevit etiam aliquas illarum exceptiones, ***conc.;*** secus, ***neg.*** Unico enim actu Deus decrevit generalem naturæ cursum et ejusdem exceptiones. « Deus ab æterno prævidit et voluit se facturum quod in tempore facit. Sic ergo instituit naturæ cursum, ut tamen præordinaretur in æterna sua voluntate quod præter cursum istum quandoque facturus erat » — (**S. Th.**, *Q. Disp.*, I., q. 6, a. 1, ad 6).

Obj. 2. — Ordo naturalis non minus quam ordo moralis a Deo procedit: ***atqui*** ordo moralis est absolute immutabilis; ***ergo*** et ordo naturalis.

Resp. — ***Dist. maj.*** Ordo naturalis et moralis procedunt a Deo et relationem omnino eamdem habent ad divina attributa, ***neg.;*** habent relationes partim easdem partim diversas, ***conc. Conc. min.*** et ***dist. concl.*** Ordo naturalis ***universalis*** mutari nequit ***conc.; particularis, neg.*** Ordo moralis fundatur in debita relatione hominum ad Deum; divina autem sanctitas et sapientia postulant hujus ordinis immutabilitatem. Creaturæ vero habent ordinem ad Deum et ad invicem. Ordo, quo creaturæ ad Deum tamquam ad finem ulti-

mum referuntur, est simpliciter immutabilis; secus vero prout ad invicem ordinantur; hujus ordinis mutabilitatem exigit absolutum Dei dominium in suas creaturas. « Licet Deus possit facere contra ordinem, qui est *unius creaturæ ad aliam,* quod est quasi naturæ particularis respectu ipsius; non tamen potest facere contra ordinem *creaturæ ad seipsum*... Deus faciendo præter cursum naturæ, non removet *totum ordinem universi,* in quo consistit bonum ipsius, sed *ordinem alicujus particularis causæ* ad suum effectum» — (**S. Th.** *loc. cit.* ad 3 et 7).

CAPUT SECUNDUM.

De Miraculo.

144. Ad theologiam apologeticam pertinet miraculorum *existentiam* et *vim probativam* in gratiam veræ religionis discutere; potest tamen ratio humana sua virtute nativa eorum possibilitatem, cognoscibilitatem ac finalitatem plene extra omne dubium statuere. Non otiosa nec minoris momenti reputanda est hæc quæstio; imprimis enim cum ea nectitur divinæ revelationis cognitio; deinde vix alia existit doctrina, quam rationalistæ et generatim hodierni irrisores veræ Fidei tam acriter, tam pertinaciter impugnant. Omnem namque operam in eo ponunt, ut miracula esse impossibilia evincant, vel saltem ea non posse ab effectibus virium naturalium discerni.[1]

In hoc capite prius agitur de miraculorum notione et finalitate, deinde de eorum possibilitate, demum de eorum cognoscibilitate.

[1] Modern apologists must be armed from head to foot, because since deism and so-called enlightenment dawned on the world, miracles have been the main point assailed. The denial of miracles is the starting-point of modern rationalists, who hold it as a firmly fixed principle that miracles have no more a place in humain affairs than in events of nature. Here again ontologists make common cause with rationalists. Ontologists deprecate any critical examination of miracles because they hold that miracles are significant in their bearing not on historical events, but only on faith. A miracle, they say, was never intended to be an object of historical faith; it rests wholly on its own internal credibility — (**Schanz,** *A Christian Apology,* v. ii., p. 325).

ART. I.

DE MIRACULI NOTIONE AC FINALITATE.

145. Nomen *miraculi* etymologice et sensu latiori sumptum significat aliquem effectum qui admirationem excitat; maxima vero admiratio excitatur, quando causa alicujus effectus transcendere vires naturæ intelligitur. Unde, **miraculum** sensu stricto definitur: « *Opus sensibile, divinitus factum, insolitum, supernaturale* » (**Pesch**, *Phil. Nat.*, v. ii., p. 375).

Dicitur 1°. *opus* **sensibile**, quia licet miracula fieri possint in natura spirituali, et dentur « miracula gratiæ, » tamen hæc, quum in mundo aspectabili non fiant, relate ad nos rationem *signi* non habent, nec proinde fini miraculis præstituto, qui est manifestare aliquid supernaturale, adaptantur.[1]

Dicitur 2°. **divinitus** *factum*, quia ad miraculum semper requiritur specialis a parte Dei interventus, ita ut creatura, si in miraculis patrandis adhibeatur, nonnisi instrumentaliter, aut impetratorie, aut ministerialiter adhibeatur.[2]

[1] The primary element in a miracle lies in its being a sensible sign, a sign that strikes the senses, and thus it is distinguished from so-called spiritual miracles and miracles of grace. In this distinction, however, no appreciation of their respective values is included. All that is meant is that these sensible signs are usually called miracles, because they are peculiarly adapted to awaken wonder and astonishment in man—a being compounded of sense and reason; while miracles in the spiritual life are worked, as a rule, in the soul of man, according to the laws laid down by God, and are only visible to the outer world in their effects, or when (as in the conversion of Saul) joined with external signs—(**Schanz**, *loc. cit.*, p. 333).

Miracles, as understood by St. Thomas and Catholic theologians, are extraordinary Divine operations in nature, that is to say, *in the sphere of sensible corporeal things*—(**Boedder**, *Nat. Theol.*, p. 417).

[2] St. Thomas requires for the existence of a miracle that the effect in question should be attributable exclusively to Divine power. It appears from the context of his doctrine that he means to say: The principal cause of a miracle is God alone; a creature can only be instrumental in its operation either by disposing the matter in which, by virtue of the Divine volition, the miracle is produced, or by obtaining miracles from God through prayers or

Dicitur 3°. *insolitum,* quia miraculum consueto cursui naturæ est contrarium, et in natura quædam apparet dispositio, ob quam videtur rem non debere fieri vel non ita fieri. « Insolitum (ait S. **Thomas**), quod in definitione miraculi ponitur, ex se non dicit *raritatem facti,* sed excludit *solitum* cursum naturæ; unde si quotidie cæci illuminarentur, nihilominus miraculum esset, quia præter cursum naturalem, qui nobis est consuetus, contingeret» (In 2 Sent., q. 18, a. 2, ad 1).

Dicitur 4°. *supernaturale,* quia sicut effectus, qui fit juxta ordinem naturæ, *naturalis* dicitur, ita quidquid efficitur in natura, sed non juxta leges viresque naturales, *supernaturale* dicendum est.

146. Obs. — Controvertitur, utrum ratio miraculi stricte dicti exigat, ut ipsum excedat *omnes* vires naturales tum corporeas tum spirituales, an sufficiat, ut excedat vires *corporeas*. Aliis verbis, num possint angeli virtute *propria* miracula vera patrare. Communis autem et quidem, ut videtur, vera opinio est omne miraculum proprie dictum excedere virtutem *totius naturæ creatæ,* et proinde solum Deum posse esse miraculi causam principalem, licet opera angelorum per modum artis effecta *mira* vel *miraculosa* sint *quoad nos,* utpote facta præter ordinem naturæ a nobis cognitum. At quum effectus, quos angeli boni sua nativa virtute producunt in rebus naturæ, sint signa divinæ voluntatis, miracula dici solent. «Ex hoc (inquit **S. Th.**), aliquid dicitur esse miraculum, quod fit præter ordinem *totius naturæ creatæ*. Hoc autem non potest facere nisi Deus; quia quidquid facit angelus vel quæcumque alia creatura propria virtute, hoc fit *secundum ordinem naturæ creatæ, et sic non est miraculum*» (1, q. 110, a. 4). De hac sententia cf. *Mazzella* (De Religione, p. 117, ed. 5), *Zigliara* (Propædeutica, lib. 1, c. 22) *Janssens*. (De Deo Creatore. p. 946); fuse eamdem opinionem defendit *Urráburu* (Cosm., p. 402-418). Pro opposita vide *Ottiger* (Theol. Fund., v. i., p. 173).

147. Consectaria. 1°. Miraculum excedere vires totius naturæ, et proinde a Deo solo fieri posse, non perinde est ac omne, quod a Deo solo fieri potest, esse miraculum. Et revera, miraculum dici nequit *(a) justificatio impii,* quippe quæ in natura visibili non fit, nec præter ordinem naturæ contingit, quum ad hunc ordinem non pertineat;

good works, or by commanding in the name of God that a miracle should take place — (**Boedder**, *loc. sic.*, p. 413).

(b) mundi creatio, quia creatione ordo naturæ, qui miraculo præsupponitur, primo constituitur ; *(c) animæ creatio,* quum hæc creatio pertineat ad ordinarium naturæ cursum ut complementum humanæ generationis ; *(d) divinus concursus* ad operationes creaturarum, quia natura creata illum exigit ; *transsubstantiatio,* tum quia non est sensibilis,[1] tum quia fit secundum ordinem supernaturalem a Deo hic stabilitum.

2°. Quum inter vera miracula reperiantur effectus, qui per se possunt viribus naturæ produci, ut tales effectus miracula censeantur, constare debet eos non potuisse causis naturalibus effici eo modo, quo actu efficiuntur, et proinde eos non causam naturalem sed Deum auctorem habere. Unde, ad effectum miraculosum distinguendum ab effectu naturali, modum productionis, potius quam rem productam, perscrutari oportet ; idem namque factum est vel non est miraculum, prout non debetur vel debetur causæ mere naturali.

3°. A miraculo distinguenda sunt *præstigium* et *opus magicum :* « *præstigium* enim est mera illusio per immutationem ab aliquo agente intelligente et invisibili effecta in organis sive sensuum exteriorum sive imaginationis, ut aliter res aliqua appareat, ac est in se : unde etiam dictum est præstigium ex eo, quod oculi hominum perstringuntur, inquit S. Thomas. *Magia* autem est ars mira patrandi sive per occultas vires naturæ, sive per occultam industriam sive ex dæmonis interventu » (**Urráburu**, *Cosm.*, p. 393). Neutrum habet quidquam vires naturæ excedens, immo his viribus adhibitis talia peraguntur.

148. Miraculorum Finis. Finis debet esse, cur miracula fiant. Jam, nequit hic finis esse bonum naturæ ; naturæ enim provisum est suis legibus, quibus constanter dirigitur ad finem suum attingendum. Finis igitur miraculorum ordinem supernaturalem spectat ;[2] in quo ordine

[1] The visible multiplication of the loaves was a miracle, and Transubstantiation, being invisible, is not — (**Hettinger**, *Revealed Religion,* p. 72).

[2] God does not arbitrarily interfere with the working of the na-

haberi debent tamquam testimonium et veluti sigillum divinitatis aliquid indicantis, vel approbantis, vel confirmantis. « Sic, fit miraculum : *(a)* ut manifestetur bonitas Dei erga eum, in cujus bonum cedit miraculum ; *(b)* ut manifestetur innocentia, sanctitas alicujus viri ; vel ut nequitia hominis perniciosi nota fiat ; *(c)* ut pateat revera a Deo revelatum esse mysterium aut legem, quæ homo affirmat se a Deo audivisse et ad quæ ceteris nuntianda asserit se constitutum esse a Deo legatum. — Ideo merito synodus Vaticana asserit : ' Miracula et prophetiæ, quum Dei omnipotentiam et infinitam scientiam luculenter commonstrent, divinæ revelationis signa sunt certissima, et omnium intelligentiæ accommodata,' *(Sess.* 3, c. 3). Talem esse finem miraculorum probatur tum consensu omnium populorum, qui in prodigiis digitum Dei agnoscere volunt, tum ex natura rei, excluso alio fine » (**Lahousse**, *Cosm.*, p. 432). Exinde sequitur quodcumque vero miraculo confirmatur, tamquam indubium habendum esse, quantumvis nostram excedat comprehensionem.

ART. II.

DE MIRACULORUM POSSIBILITATE.

149. THESIS XIX. — Effectus, qui ordinem totius naturæ creatæ superant, divinitus fieri possunt in rebus creatis.

Stat. Quæst. Fere innumeri existunt hodie, qui non solum miraculorum existentiam, sed etiam ipsam eorum possibilitatem infitientur.[1]

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tural laws which He himself has laid down, because to do so would be incompatible with His infinite wisdom, which is identical with His power. Therefore, in the natural order there are no miracles, *i.e.*, exceptions to the natural laws. But over and above the natural order, God has given a supernatural order to those of His creatures who are endowed with reason, and He has done this through Christian revelation. Miracles occur only to further the aim of this supernatural order — (**Wasmann**, *The problems of Evolution*, p. 198).

[1] In ancient times sceptics and pantheists strenously maintained that miracles were impossible. And since the rise of deism this denial has been the watchword of all forces drawn up in battle array against Christianity. It is the war-cry of Spinoza, Hume and the

Ut miraculorum possibilitas facilius intelligatur, juvat diversas eorum species recensere. Licet enim omnia miracula excedant vires naturæ, tamen non omnia eas eodem modo excedunt. Unde, *ratione modi, quo se habent relate ad vires naturæ,* miracula dividuntur a *S. Thoma (Q. Disp.* 1, q. 6, a. 2, ad 3) 1°. in miracula *supra naturam,* i.e., opera, quæ adeo transcendunt naturam, ut ipsa numquam talia opera efficere possit; et quidem *(a)* numquam *absolute,* ut corporum compenetrationem vel multilocationem (miracula *quoad substantiam facti); (b)* numquam *in tali subjecto,* sic, *v.g.*, natura vitam efficere potest, sed non in cadavere, et præstare visum, sed non in cæco (miracula *quoad subjectum).* 2°. In miracula *contra naturam,* i.e., opera quæ fiunt, etsi «in natura manet contraria dispositio ad effectum, quem Deus facit; sicut quando conservavit pueros illæsos in camino, remanente virtute comburendi in igne, et quando aqua Jordanis stetit, remanente gravitate in ea» (**S. Th.**, *ib.).* 3°. In miracula *præter naturam,* i.e., opera, quæ natura facere potest sive per se sive per interventum entis rationalis, sed non eo modo, quo divinitus efficiuntur,[1] *v.g.*, conversio

entire pantheistic and semi-pantheistic host. It is the pæan of modern rationalists and pantheists, who regard the impossibility of miracles as self-evident. Neither mechanical nor idealistic monism, nor shallow deism, nor dualism can give truce or quarter to miracles. For the monist sees in all things a necessary evolution, either material or spiritual, of universal being, while the deist banishes God, after creation, to an airy region beyond the universe. The one point in which all these systems agree is in denying or setting aside, or scrupulously avoiding all reference to the supernatural. For, as science is bounded by nature, and as all but experience and sense-perceptions are beyond its ken, concern about the supernatural is considered beneath the dignity of a scientific man. And in truth, the theist's standpoint is the only one from which miracles can be proved possible. According to it, miracles must necessarily be possible, because God's will and almighty power are infinite, and because without contradicting Himself, He can, in His infinite wisdom, employ the creatures He has made for higher ends and purposes — (**Schanz,** *op. cit.,* **p. 338**).

[1] The definition *(miraculi)* says, that every miracle is *supernatural,* or *above nature.* In the division, on the contrary, only one class of miracles is marked as being *above nature.* The solution is

aquæ in vinum, subita membri confracti sanatio, multiplicatio panis.

Obs. — *Ratione effectus, qui producitur,* miracula iterum dividuntur a *S. Thoma* (1, q. 105, a. 8), in miracula *(a) quoad substantiam facti,* si effectus *absolute* excedit vires naturæ; *(b) quoad subjectum* (in quo fit), si effectus non in se, sed respectu talis subjecti excedit vires naturæ; *(c) quoad modum* (quo fit), si effectus nec in se nec in tali subjecto, sed tali modo productus, excedit vires naturæ. Hæc divisio cum priori sic reconciliatur: —

Supra naturam	*(a) absolute*	**quoad substantiam facti.**
	(b) respectu talis subjecti	**quoad subjectum.**
Contra naturam	*ut supra*	
Præter naturam	*ut supra*	**quoad modum.**

150. Prob. Thesis. Arg. I. — Miraculum est opus vel supra naturam, vel contra naturam, vel præter naturam; *atqui* triplex hæc species operis divinitus effici potest; *ergo.*

Prob. min. Effici potest opus *(a) supra naturam;* res enim creatæ, etsi in suis naturis et viribus sunt finitæ et contingentes, habent tamen potentiam obedientialem ad recipiendos quoscumque effectus Deus in ipsis operari voluerit, licet ad tales effectus nullam habeant virtutem naturalem (cf. *Ont.,* n. 320). Sic, natura non potest mortuum suscitare, corpus glorificare; data autem virtute infinita, cadaver est in potentia obedientiali ad vitam, ad gloriam.

found in the fact that in the definition, the miraculous effect is considered as it exists in the concrete with all its circumstances, knowable to an intelligent observer. When thus viewed, every real miracle must be pronounced to be supernatural, or a divine effect... Therefore the definition is not opposed to the division; because in the definition the miraculous effect is viewed as happening under all the peculiar circumstances under which it does happen: whilst the division of miracles is made by comparing the effect with the forces of nature, abstractively from concrete circumstances—(**Boedder**, *Nat. Theol.,* p. 420).

(b) Contra naturam, quia aliud sunt leges naturæ, aliud earum exercitium. Jam, omnibus ad agendum requisitis a parte agentis creati præsentibus, potest Deus illi agenti denegare concursum consentaneum, simulque talem concursum præbere, qualis convenerit agenti contrariam virtutem habenti ; quo facto, contrarius sequeretur effectus, ut cum angelus « excussit flammam ignis, et *fecit medium fornacis quasi ventum roris flantem* » *(Daniel,* c. 50) ; vel Deus ad vim agentis aliam vim superiorem opponere potest, ut quum aquæ maris rubri steterunt, gravitate in aquis manente.

(c) Præter naturam, quia « hoc ipsum quod causæ secundæ ordinantur ad determinatos effectus, est illis a Deo; unde Deus, qui alias causas ordinat ad determinatos effectus, potest etiam determinatos effectus producere per seipsum sine quocumque alio» (S. Th., 1, q. 105, a. 1, ad 3).

151. II. —Miracula sunt possibilia, si eorum existentia nullam involvit repugnantiam sive ex parte creaturarum sive ex parte Dei ; aliunde enim repugnantia repeti nequit. *Atqui* ex neutra parte adest repugnantia ; *ergo* sunt possibilia.

Prob. minoris p. 1ª. Repugnantia ex parte creaturarum in eo esset, quod deficerent, *(a)* si earum connaturalis operatio impediretur, *(b)* si in eis effectus produceretur, quem ipsa producere nequeunt ; nam hoc duplici modo fiunt miracula. *Atqui (a)* quum aliud sit rei entitas, aliud ejusdem operatio, retrahi potest conditio *ad operandum* (v.g., divina cooperatio), manentibus omnibus requisitis *ad existendum. (b)* Nec incurritur repugnantia ex eo, quod in natura fiant effectus, qui capacitatem agentium naturalium excedant ; imprimis enim plura opera, quæ miraculosa dicuntur, vires naturæ efficere possunt, licet non possint in tali subjecto vel tali modo ; quantum igitur ad hæc opera attinet, nulla datur repugnantia. Deinde, potest Deus in rebus creatis inducere formas, quas causæ creatæ numquam efficere possunt ; hoc namque debetur ejus omnipotentiæ et supremo, quod in eas habet, dominio. Quidquid igitur Deus in eis facit, ipsis conveniens

dicendum est; et eo usque saltem secundum earum naturam, quod vi potentiæ obedientialis aptæ sunt ad recipiendum vel exequendum quidquid Deus velit.[1]

Prob. minoris. p. 2ª. Repugnantia ex parte Dei in eo esset, quod miracula non concordarent cum divina sapientia; *atqui* res aliter se habet. Deus etenim miracula patrando consilium suæ sapientiæ non mutat sed implet; nam ordinem naturalem ab æterno statuens simul exceptionem prævidit et decrevit (cf. *S. Thomam, loc. cit.* supra, p. 187, 2). Præterea, spectat ad sapientiam fines inferiores ordinare ad fines superiores; maxime igitur congruit, ut divina sapientia res inferiores a suis finibus connaturalibus aliquando avertat, ut attingatur altior finis (*v.g.,* creaturæ rationalis beneficium) et speciatim ut divina potentia et dominium manifestentur.[2]

[1] The relation of nature to God as its First Cause involves as its consequence that an intervention on His part can never be reckoned as a dislocation in the scheme of things — a violation of nature's order. It would be as absurd to call a miracle a violation of nature's order as to call some new and unexpected directions given by a general to the troops under his command a violation of the army's order. The due order of the army is what the general prescribes — and nothing else — (Joyce, *The Question of Miracles,* p. 17).

[2] Every day millions of men are counteracting or subduing nature by art, and yet there is no substantial destruction of nature. The elements remain the same. The proportion of the elements in the atmosphere is undisturbed. Temperature is altered by changes on the earth's surface. Moisture can be increased or diminished. But all these mighty changes are powerless to affect nature, which remains ever the same. Shall God alone, then, be unable to interfere with this complex machinery of forces without jeopardising the order of nature? Is it credible that the Creator alone in His wisdom, cannot turn the forces of nature to any but their ordinary purpose? Modifications meet us at every turn; is the Creator alone powerless to effect them? There is, indeed, a vast distinction, and we have no wish to conceal it, between man's power over nature, and the power of working miracles. Man can always point to the natural threads from which his artistic web is woven, but he can never lay bare the ultimate reason of a miracle. There always remains a supernatural residue. To hide this from sight would be to destroy miracles root and branch. It is sufficient to have shown that this miraculous something is compatible both with the idea of God the Creator and with the laws of nature, and that there is nothing, physically or morally, on the part of God or man, that

152. *Thesis confirmatur* testimonio historico, quo certi reddimur plura facta, quæ omnes vires naturæ excedunt, contigisse. Sic, certum est Christum a mortuis resurrexisse, Lazarum aliosque plures ad vitam rediisse, cæcos visum recuperasse, etc.; *atqui* quod factum est fieri potest, seu *ab esse ad posse* valet illatio; *ergo* miracula sunt possibilia.

Dices 1°. Repugnat divinæ providentiæ, ut fiant miracula; sic enim perit certitudo circa cursum eventuum futurorum.

Resp. Perit certitudo metaphysica, minime vero certitudo physica, quum hæc tantum requirat, ut miracula non adeo frequentur et universim eveniant, ut leges naturæ videantur mutatæ vel cursus naturæ abruptus.[1] Quum vero Deus in bonum hominis operetur miracula,

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stands in the way of the cause or the effect. On the part of God miracles are physically possible, because as Creator He is the Lord of all nature; and also on the part of nature, because all its forces are conditioned and depend on a higher order, and because its laws have certain limits. Miracles are morally possible on the part of God, for He does not change in nature and person, but only carries out in a perfect manner what is necessary for realising His eternal plan. On the part of man they are morally possible, because his free will is not forced but merely directed to its true end. Rather God lights up a path that leads to faith and salvation — (**Schanz**, *op. cit.*, p. 343).

[1] The infidel Gibbon, when speaking of « the innumerable prodigies which were performed in Africa by the relics of S. Stephen», has this most shallow remark: « A miracle », he says, « in that age of superstition and credulity lost its name and its merit, since it would scarcely be considered as a deviation from *the ordinary and established laws of nature* ». Now, let us make the wild and extravagant supposition that some given law of nature, in some given time and place, were far more frequently suspended by miracle than allowed to take its ordinary course. Let us imagine, *e.g.*, that England were again Catholic; and that every Englishman, by invoking S. Thomas of Canterbury, could put his hand into the fire without injury. Why, the very fact that in order to avoid injury he must invoke the Saint's name, would ever keep fresh and firm in his mind the conviction that fire does naturally burn. He would, therefore, as unquestionably, in all his physical researches, assume this to be the natural property of fire, as though God had never wrought a miracle at all — (**Ward**, *The Philosophy of Theism.*, v. ii. p. 206).

haud timendum est dubium de legibus vel cursu naturæ. Immo, maxime decet Dei providentiam, ut miracula nonnunquam fiant, eo fine ut oculis se quasi manifestet, bonos tuendo et fovendo, malos puniendo, ordinem moralem protegendo.

Dices 2°. Per miracula energia mundana augeretur, quod procul dubio legi constantiæ energiæ repugnaret.

Resp. Lex constantiæ energiæ enuntiat nullum motum rerum materialium spontè et de novo oriri, nullum cessare; Dei influxum in novo motu producendo non negat, et proinde nulla hic habetur repugnantia. Deinde, si Deus in miraculis patrandis modo agentis materialis operaretur, augeretur quidem energia mundana, haud vero si modo spirituali et per solum voluntatis imperium operatur. Sic, *v.g.*, Deus mortuum resuscitando, materiæ non impertit energiam novam, sed animam corpori infundendo facit, ut latens corporis energia per animæ interventum activa evadat.

ART. III.

DE MIRACULORUM COGNOSCIBILITATE.

153. THESIS XX. — Miracula tamquam miracula certo a nobis cognosci possunt.

Stat. Quæst. Qui miracula a nobis non posse certo cognosci arbitrantur, duplici ratione innituntur: *(a)* nos non omnes vires naturæ cognoscere, et ideo prudentis esse semper timere, ne effectus, qui « miraculosus » pronuntiatur, revera sit ab aliqua hucusque ignota virtute naturali, sicut quotidie ope electricitatis et hujusmodi agentium naturalium effectus producuntur, quos si veteres vidissent, proclamassent miracula; *(b)* nos non posse miracula distinguere ab operibus miris, quæ spiritus etiam mali patrare possunt.

Hic observa non esse nobis in animo affirmare singula miracula certo a nobis cognosci posse tamquam vera miracula, sed, miracula suapte natura talia esse, ut, si facta factorumque adjuncta sedulo considerentur, tamquam

miracula veri nominis vel specie tenus manifesta fiant. Quod attinet ad mira nostræ ætatis inventa et opera spirituum creatorum, oportet recolere hanc legem philosophorum ac cujusvis prudentis : *phœnomena mundana causis naturalibus tribuenda sunt, etiamsi hæ causæ determinate non cognoscantur, quamdiu non constat causas hujusmodi impares esse ad illa producenda.*[1] Unde, mira scientiarum nemo prudens umquam miracula vere putavit, sed simul atque phænomena prius incognita apparent, homines ad eorum causas explorandas negotium solent et solebant dare.

Deinde, non est cur immoremur in distinguendo a veris miraculis mirabilia, quæ operantur *boni* angeli ; nam quum hi, nisi Deo volente et jubente, in rebus mundanis se non immisceant, eorum opera, si non in se, certe *ratione finis,* cui subserviunt, inter vera miracula adnumeranda sunt.[2]

154. Prob. Thesis. Arg. — Ad miraculum cum certitudine cognoscendum et illud ab aliis operibus quantumvis miris distinguendum, oportet scire : *(a) veritatem historicam* miraculi, *i.e.,* factum, quod miraculum dicitur, revera existere vel extitisse ; *(b) veritatem philosophicam* miraculi, *i.e.,* illud esse præter cursum naturæ ; *(c) veritatem theologicam* miraculi, *i.e.,* illud esse divinitus patratum *(i.e.,* a Deo ipso vel ex ejus jussu). *Atqui* hæc tria certo a nobis cognosci possunt ; *ergo.*

[1] If a probable solution of any problem can be found which is consistent with the ordinary course of nature, we must not go beyond nature in search of one. — (**Kelvin** apud Gerard, *The Old Riddle and the Newest Answer,* p. 98).

[2] As it may be occasionally practically impossible, in some special cases, to decide whether a given extraordinary fact surpasses the forces of angelic power and requires the immediate intervention of God Himself, it is well to bear in mind this consideration, that the prodigies wrought by the good spirits from the point of view of apologetics, possess as proof exactly the same value and efficacy as miracles rightly so called, from the simple fact that angels cannot intervene in suspending, as to some particular fact, the ordinary course of nature, without the special permission and concurrence of the Providence of God — (**Devivier-Sasia.** *Christian Apologetics,* v. i., p. 162).

Prob. minoris p. 1ª. De veritate *historica* miraculi, sicut de quovis alio facto sensibili, certi effici possumus sive per immediatam sensuum nostrorum experientiam sive per auctoritatem testium (cf. *Crit.*, n. 244, *obj.* 2).[1]

Prob. p. 2ª. Ut de veritate *philosophica* miraculi certi reddamur, minime necesse est scire omnes vires naturæ, vel perspectum habere quousque virtus alicujus agentis se extendat; sufficit enim, ut efficacia virium naturalium *negative* cognoscatur, *i.e.*, ut intelligatur, quid natura absolute, vel in quibusdam adjunctis, non possit efficere. Jam, non raro certi esse possumus vires naturæ omnino impares esse ad producenda plura facta historice certa. Sic, certi sumus vocem humanam non posse mortuum ad vitam revocare vel leprosum sanare, nec lutum cæci oculis applicatum visum donare.[2]

[1] Viewed in its external aspect, a miracle is a fact, perceptible to the senses, like every other act of experience, and is therefore capable of proof, according to the ordinary rules of evidence. Its extraordinary character in no way invalidates the trustworthiness of the witnesses testifying to its occurrence, but only demands a stricter and more careful scrutiny, and the evidence, if found credible, should be accepted as true. If every event of an exceptional character is therefore to be rejected as incredible, there would be an end to history and a subversion of the moral order of the world, upon which all human authority rests — (**Hettinger**, *Revealed Religion*, p. 85).

[2] Miracles, so Spinoza, Hume, Hobbes, and others proclaim, are a symbol of ignorance. . . Before we can recognize a miracle, they say, we must have an exact knowledge of all nature's laws and forces, and be able to form an accurate estimate of God's immediate action. To comply with this last condition a special revelation is needed; and even were it at hand it might be non-suited by the plea of deception. But this condition is not strictly necessary to enable us to recognize a miracle, as it is already implied in the first. For an effect that baffles all the forces of nature must be produced by the highest cause. The one thing necessary is to show, not merely that the cause is unknown, but also that it cannot have been a natural cause.

May we, then, set down miracle narratives as due to a defective knowledge of nature's forces? . . . Is a witness, not acquainted with the whole range of medicine, disqualified from giving evidence of the raising of a dead man to life? Why demand in their case what is impossible, namely, an absolute knowledge of all nature's forces? The demand is preposterous, and the height of unreason. Here, as elsewhere, a knowledge of the natural forces and laws

Prob. p. 3ª. De veritate *theologica* miraculi sæpe possumus esse certi. Nam, si Deus ad suam gloriam hominisque bonum solito naturæ cursui deroget, omnino congruit, ut opera sic effecta præ se ferant indicia, quibus tamquam divinitus facta cognosci queant, ut homines propter beneficia collata debitam gratiarum actionem debitamque laudem et gloriam Deo reddant. Quæ indicia ni adessent, Deus suæ sapientiæ et fini intento in miraculis patrandis certo deesset.[1]

Et quidem, indicia seu criteria, quibus miracula, quæ Deus sive per seipsum sive per ministerium creaturarum operatur, a fraudibus et præstigiis dæmonis « quintuplici modo distingui possunt : 1°. *efficacia* et *veritate ;* vera enim miracula continent realem ac verum effectum, at in operibus diaboli sæpe nihil est solidum, vel certe nihil ad perfectionem adductum, sed vel pura ludibria et præstigiæ vel solæ inchoationes ac tentamina quædam verorum effectuum. 2°. *Durationc*, nam quæ arte diabolica conficta

that come within the special department in which the miracle is enacted must suffice. But, even here, it is not necessary to gauge the limits of the law exactly, but only to define them negatively, that is, to show that the miracle cannot *conceivably* be explained within such limits. Only a very slight knowledge of optics is requisite to be able to assert that a man born blind cannot be healed. Nor, again, need one be an experienced physician to maintain that it is impossible for a dead man to raise himself to life again — (**Schanz**, ***A Christian Apology***, v. ii., p. 347-350).

[1] God never works miracles but for an end worthy of Himself. He works them in order to draw men nearer to Himself by extraordinary manifestations of His Divine attributes, of His power, wisdom, benevolence, mercy, justice. His miracles are intended to be a solid comfort to men of good will, and an earnest and terrifying warning to those who revolt against the voice of their conscience. They are, as it were, a Divine speech expressed, not by Divine words, but by Divine deeds. Now, is it possible that God should thus address men without offering them sufficient means to ascertain that He has spoken? To suppose this would involve the denial either of God's power or of God's wisdom. The supposition in fact amounts to this, either that God cannot make Himself known as the Author of these special works, or that He does not care to do so. Take the first alternative, and you deny God's power; take the second and you deny His wisdom. In both cases you think of the Creator in a way altogether incompatible with His perfections — (**Boedder**, ***op. cit.***, 458).

sunt, diu perdurare nequeunt. 3°. *Fine,* quia vera miracula fiunt ob gloriam Dei, vel caritatem proximi, vel commendationem virtutis, vel confirmationem veritatis; at falsa vel ob vanitatem, vel ob lucrum, vel ob ruinam animarum, eversionem veræ Fidei sanctorumque morum, aliumve inhonestum finem. 4°. *Modo,* vera enim patrantur vel oratione vel invocato pie ac reverenter nomine Dei, falsa autem incantationibus, verbis vel signis inusitatis, aliisque deliramentis. 5°. *Utilitate,* quia vera miracula semper magnam aliquam afferunt utilitatem vel animæ vel corpori vel utrique; at diabolica opera vel vana prorsus et inutilia sunt, vel sæpe etiam nociva; est dæmon inimicus humani generis, quos non beneficiis cumulare, sed perdere ac post miseram et scelestam vitam in inferos detrudere vehementer exoptat» (**Urráburu**, *Cosm.*, p. 440).

155. Schol. Moderni ad miraculorum veritatem vel saltem eorum cognoscibilitatem evertendam provocant ad phænomena, quæ ope hypnotismi obtinentur, et speciatim ad curationes morborum hoc medio effectas. Atvero, recte consideranti elucebit nec veritatem nec cognoscibilitatem miraculorum ob phænomena hypnotica in discrimine versari. Imprimis enim facta, quæ ad primam et alteram classem miraculorum pertinent, nec obtenta sunt nec umquam obtineri poterunt per hypnotismum, quum talia facta sint simpliciter *supra* vel *contra* naturam (n. 149). Deinde, morbi ad quos depellendos hypnotismus capax existimatur, sunt ii, qui «nervosi» vocantur;[1] nervi autem

[1] Hypnotic cures, having in recent years been urged as an argument against the supernatural character of the miracles wrought at some of the famous Catholic shrines or at the invocation of the Saints, it is necessary that we should endeavour to determine in what the difference between them and authentic miracles consists. We say authentic miracles, because it must be borne in mind that not all the occurrences popularly described by that term are recognized as genuine by the Catholic Church. . . Now the cures obtained by hypnotism are for the most part of a neuropathic and hysterical nature. The means employed, viz., sleep and suggestion, are sufficient to account for the removal of such ailments, or at least for an improvement of the condition attending them. Such cures, moreover, are not unfrequently followed by relapse or by some mental or physical disorder. Miraculous cures, on the other

vi et influxu imaginationis sæpe adeo affici possunt, ut morbi, quibus laborant, removeantur.[1] Contra, horum morborum curationes vix umquam vel difficillime, saltem ab Ecclesia, inter vera miracula recensentur. Quantam curam adhibeat Sancta Sedes in examinandis factis, quæ tamquam miraculosa ei proponuntur, videri potest apud *Benedictum* xiv. De servorum Dei beatif., lib. 4, pars 1, c. 8; *Ward, ob. cit.*, v. ii., pp. 208 sqq.

hand, are cures wrought in persons suffering from deep-seated organic affections, for the removal of which no magnetic sleep, no æsthesiogenic agent, no concentration of the will are sufficient. And such cures are, as a rule, physically perfect, and are never wrought to the detriment of the sufferer's intellectual faculties.

Hypnotic cures therefore only tend to bring into prominence the greatness of the Divine power in controlling by true miracles the elements of nature and in causing effects superseding the laws of the universe — (**Lépicier**, *The Unseen World*, pp. 271 sqq.).

It may safely be said that virtually the whole medical profession is agreed that there is not a jot of positive evidence that suggestion, whether hypnotic or otherwise, can do anything to remedy an organic lesion: that, on the contrary, all the evidence hitherto produced goes to show that its curative effects are strictly limited to functional derangements. . . « Suggestion, Bernheim tells us, cannot kill microbes, it cannot cretify tubercles, nor can it cicatrize a circular ulcer of the stomach. . . It can restore the function provided that the lesion has not definitely destroyed it, and provided that functional affection is only a dynamic trouble arising outside the field of the lesion. But suggestion cannot stay the organic evolution of the malady. Too often the amelioration it produces is but transient. Those illnesses which of their nature pursue a progressive course, such as locomotive ataxia or disseminated sclerosis, follow out their inexorable advance, and there comes a time when suggestion can do no more » — (**Joyce**, *The Question of Miracles*, pp. 49-51).

[1] The mental emotions of joy and sorrow, love and hatred, fear and courage, benevolence and anger, may all arise either from real, or from *imaginary causes only*, and may seriously affect the physical frame. In many instances these different and opposite emotions have proved almost instantly fatal, in other instances equally sanative. How is this achieved? Are not the whole of the emotions accompanied by remarkable physical changes, in respect to the respiration and circulation of the blood as well as sensation? Are they not highly excited in one class, and depressed in the other? And may not this act as the approximate cause in effecting the permanently beneficial results during hypnotism? — (**Braid**, *Neurhypnology*, p. 286).

APPENDIX.

De Spiritismo.

156. *Spiritismus* seu *spiritualismus,* qui ortum habuit in *Statibus Fœderatis* circa medium sæculum nuper elapsum et jam longe lateque diffusus, describi potest ut ars communicandi cum spiritibus, seu, systema evocandi spiritus ad mira per eos obtinenda.[1]

Reipsa non res sed nomen est novum; non aliud enim est spiritismus quam fœdissima necromantia vel magia veteribus cognita, a qua in eo tantum differt, quod olim spiritus per se et directe suas revelationes facere solebant iis, qui oracula quærebant, nunc autem per «media», *i.e.,* personas, quæ ut aptæ sint, quamdam specialem corporis constitutionem habere debent. Nec tamen personis solis sed etiam rebus inanimatis competunt virtus et munus « mediorum » (cf. *Raupert*, Modern Spiritism, p. 59).

157. Phænomena Spiritismi duplicis sunt generis: *physica* seu *mechanica* et *intellectualia*. *Physica* sunt ea, quæ contingunt in physicis corporum statibus absque causis scientiæ notis, ut cum mensæ aliaque supellex sponte moventur, in altum sublevantur, evanescunt apparentque; subitus rigor membrorum hominum adstantium, strepitus omnis generis et alia hujusmodi.

Phænomena *intellectualia* sunt revelationes, quas spiritus per « media » quærentibus communicant. Quæ revelationes quandoque audiuntur, quandoque scribuntur calamo juxta papyrum posito vel pedi mensæ affixo, quandoque ictibus ex pacto prius statuto, manifestantur. Huc etiam pertinent dona linguarum et scientiarum « mediis »

[1] We have just passed the Jubilee of modern spiritualism, dating from the phenomena of the Fox sisters at Hydeville in 1848. . . From the Fox episode we date the rise of modern spiritualism and the consequent literature of its investigation. . . The Fox following increased till, in twenty years, the spiritualists in America amounted to two-fifths of the entire population. It took four years for the movement to travel to England, where it arrived in 1852, and it « caught on » at once — *(Essays in Psychical Research,* pp. 1-3, opus anon.).

collata, musica evocata ex instrumentis absque ulla causa apparenti.[1] In his responsis, præter pauca vera et decora, nihil aliud, ut plurimum, continetur quam mendacia, ludicra, futilia, immo turpia ac impia;[2] nihil igitur, quod vel

[1] The earliest phenomena of spiritism assumed the form of raps or knockings, apparently of mysterious origin, but occurring only in the presence of the «medium»; one knock was agreed to mean «no» and three knocks «yes». Questions could thus be asked and communications be established between the spirits and the living, through the «medium». . . . The influence of the studies of animal magnetism and hypnosis reacted upon spiritualism, and developed a class of mediums who were put or put themselves into a *trance* or sleep-waking state, in which they professed to be inspired by spirits and higher intelligences, and while thus inspired gave elaborate accounts of the spirit world. There came from «animal magnetism» the conception of «clairvoyance» — the power to see at great distances and in spite of ordinary obstacles. Mediums went into a clairvoyant trance and reported upon doings at remote places as well as beyond this sphere. In the hands of the professional mediums the phenomena increased in number and complexity. Spirit lights were seen; quasi-human voices were heard; writing was produced without human intervention; spirit photography showed the spirit forms hovering about their living relatives; in materialization séances ghostly forms appeared with the features of departed friends; some mediums were lifted or «levitated» in the air; solids were passed through solids; cords and bands were unfastened by unseen hands; messages were written upon slates carefully tied together and removed from human interference; tables were tilted; mysterious messages were written by the planchette; one's private and secret affairs were revealed by mediumistic knowledge and so on — (**Jastrow**, *Baldwin's Dictionary of Phil.*, v. ii., p. 586).

[2] The spirits are partial to the professed opinions of those who consult them, pious with the pious, affectionate with the affectionate, political with politicians, thoughtless with the gay, vulgar and gross with the vulgar. For this reason in England the spirits are sceptical, discursive and cautious; in Germany, mystical, speculative, and transcendental; and in France licentious, generous, thoughtless, and frivolous. In the United States they are positive, dogmatic, and bold, and proclaim metempsychosis, while elsewhere, especially in Italy, they declare themselves to be pantheists, atheists, materialists. In Russia they praise the orthodox religion, and at the same time encourage the nihilistic propaganda. In Spain, on the other hand, they demand that all spiritualistic societies shall be incorporated with the Freemasons, declaring that spiritism has common cause with the latter with regard to the principles and the chief foundations of doctrine. If there is one thing in which the spirits agree, it is in abusing the Roman Catholic Religion, of which

minimam utilitatem afferre potest sive scientiis, sive artibus, sive culturæ et bono generis humani. Invisibilia agentia de ipsorum nominibus interrogata, modo angelos, modo sanctos, modo dæmones, plerumque vero animas defunctorum, se esse affirmant.

158. Realitas phænomenorum. Vix necesse est quærere, utrum hæc phænomena sint certa necne; licet enim nonnulla eorum sint figmenta et fraudes « mediorum, » tamen non omnia esse hujusmodi est historice certum; innumeri namque testes iique immediati, ad diversas regiones pertinentes et in suis testimoniis proferendis omnino independentes, hæc phænomena ut indubia enarrant. Existunt præterea societates (v.g., *The Society for Psychical Research,* in Anglia et America) ad phænomena spiritistica exploranda, et viri magni nominis in scientiis naturalibus se occupant in his phænomenis investigandis et dilucidandis.[1]

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they can only speak evil — (**Lapponi** apud Raupert, *The Supreme Problem,* p. 124).

[1] The phenomena of spiritualism have been submitted to the most careful tests; and reference must be made to some of the most notable investigators. The Society for Psychical Research was established in 1882 for the express purpose of impartially investigating these phenomena. And in its latest report issued last year (1898), and representing the work of Dr. Hodgson for ten years, this inquirer maintains that he has established the impossibility of fraud, and for the first time boldly advances the claim that he has given scientific proof of survival after death.

Again, the exhibitions of the Davenport Brothers were examined both in England and America by large numbers of eminent chemists and physicians. They were all unanimous in the verdict, that the phenomena were in no way due to conjuring. . . To these may be added the testimony of many other investigators of ability, most of whom commenced their inquiries under the impression that they would be able to expose a delusion. Among the Americans may be mentioned Judge Edmonds, Robert Dale Owen, and Dr. Hale of Philadelphia. Professer Zoellner of Leipzig gives his full adherence to the teaching, after the most careful and painstaking tests in the presence of competent witnesses. Finally, Sir William Crookes, one of the most distinguished of living chemists and physicists, having made a most careful investigation extending over a period of twenty years, certifies in the most positive manner the truth of the phenomena — (**Macken**, *The Ethics of Spiritua-*

159. Causa efficiens horum phænomenorum. Certitudine factorum spiritismi admissa, restat ut vera eorum causa efficiens inquiratur, circa quam non una est sententia peritorum; alii namque ea referunt ad aliquod fluidum sive nerveum sive electricum in corpore humano contentum; alii ad aliquam vim psychicam refugiunt; alii denique ad influxum spirituum hæc phænomena attribuunt.

160. Adeo difficile est determinare ubi causæ naturales desinant et præternaturales incipiant, ut vix absolute affirmari queat phænomena *physica* spiritismi non posse produci ope alicujus fluidi vel alius causæ naturalis, sicut motus virgæ divinatoriæ in manu actoris ad præsentiam venæ aquæ; qui motus nunc communiter admittitur esse per se naturalis. Sed quidquid dicatur de phænomenis physicis, dantur phænomena spiritistica (scil., *intellectualia*), quæ certo certius postulant causam intelligéntem et præternaturalem. Jamvero, *phænomena spiritismi, quæ naturalem non admittunt explicationem, malis spiritibus tribuenda sunt.* Nam præter hominem, causæ intelligentia præditæ sunt Deus, boni angeli, animæ defunctorum, dæmones. *Atqui* 1°. blasphemum est phænomena spiritistica, quæ sunt opera futilia et ludicra, immo non raro mendacia, obscœna ac dogmatum christianæ religionis subversiva, Deo ut auctori referre.

2°. Nec fas est ea bonis angelis tribuere, quum hi nihil agere possint vel velint, nisi ex divina voluntate.

3°. Nec animis defunctorum. « Nam primum, animæ illæ, si sunt beatæ in cælo, Deo omnino subjectæ sunt, et sine speciali ejus permissione hominibus in terra apparere nequeunt. Insuper, ipsæ non magis ac boni angeli res futiles ac falsas sibique invicem nonnumquam repugnantes Christique revelationi adversas proferre umquam possunt.

Atque idem valet de animabus, quæ nondum sunt beatæ, sed tamen non in æternum damnatæ. Ipsæ enim sunt pariter Deo devotæ et ab ejus voluntate pendentes... Quod

lism, I. E. Record. *April*, 1899; cf. *Raupert*, The Supreme Problem, pp. 89-98).

porro ad animas damnatas attinet, *primum,* neque ullo modo probabile est ipsas ab hominibus spiritismo deditis pro lubitu advocari posse, quum istæ animæ alias admodum raro apparuisse perhibeantur. . . *Deinde,* tametsi animæ damnatæ mundi corporei cognitionem habent, tamen haud amplius res singulares hujus nostræ terræ hominumque in ea viventium naturali modo cognoscunt. Hinc *S. Thomas* recte dixit: 'dicendum, quod secundum naturalem cognitionem animæ mortuorum nesciunt, quæ hic aguntur, quia anima separata cognoscit singularia per hoc, quod quodammodo determinata est ad illa per vestigium alicujus præcedentis cognitionis seu affectionis, vel per ordinationem divinam. Animæ autem mortuorum secundum ordinationem divinam et secundum modum essendi segregatæ sunt a conversatione viventium, et conjunctæ conversationi spiritualium substantiarum, quæ sunt a corpore separatæ; unde ea, quæ apud nos aguntur, ignorant' (1, q. 89, a. 8). *Tum* etiam anima hominis mortui nulla amplius vi pollet in vires naturales et corpora. In quam sententiam etiam *S. Thomas* jure dicit: 'dicendum, quod anima separata sua naturali vi non potest movere aliquod corpus. Manifestum est enim, quod, quum anima est corpori unita, non movet corpus nisi vivificatum, unde si aliquod membrum corporis mortificetur, non obœdit animæ ad motum localem. Manifestum est autem, quod ab anima separata nullum corpus vivificatur; unde nullum corpus obœdit ei ad motum localem, quantum est de virtute suæ naturæ' *(ib.*, q. 117, a. 4). Ipsa sunt ergo opera malorum dæmonum; ipsi, *scil.*, multo majore scientia et potentia quam homines præditi sunt, et valent non solum corpora movere, humanis oculis subito subtrahere, etc., sed etiam humana corpora assumere sicut instrumenta ad operandum et sicut signa ad hæc vel illa significanda, et speciem hujus vel illius hominis præ se ferre hujusque historiam narrare » (**Ottiger**, *Theol. Fund.*, v. i., p. 926).

161. Exinde intelligitur, *(a)* cur responsa spiritistica contineant inepta, impia aliaque quæ vergunt in detrimentum

Fidei et humani generis ; talia enim sunt ut notæ propriæ operibus dæmonis inhærentes.[1] Intelligitur, *(b)* cur in cœtu spiritistarum appareant formæ sensibiles defunctorum vel absentium ; diabolus enim potest cadaver ingredi ac movere, vel aerem condensando corpus sibi assumere; potest etiam species corporum absentium in sensus imprimere, ita ut ea, quæ procul sunt, adesse videantur. Intelligitur, *(c)* cur «medium», ceteroquin indoctum, profunde disserere queat de rebus scientificis, quum non ipsum sed spiritus loquatur, curque cogitationes aliorum possit discernere; potest enim diabolus species sensibiles imaginationis nostræ cognoscere et exinde conjicere, immo, si velimus, certo scire, nostras cogitationes ac proposita.[2]

[1] The writer has before him a number of carefully investigated, and in some instances personally observed, cases in which the spirit-intelligence, after giving many months in succession abundant evidence of its identity with some deceased friend or relative, after conveying the most exalted teachings respecting human duty and responsibility, after habitually introducing itself by prayerful aspirations of the most elevating kind, and completely transforming the mental and moral life of the person concerned, was in the end discovered to be a masquerading intelligence, and, on its own confession, keenly intent upon working the moral and physical ruin of its victims. The ingenuity displayed in attaining this end, the tricks and subtleties resorted to in order to escape detection and to continue «in possession», were in one or two instances of a kind passing all human comprehension and imagination, and the wonder is that anything like an escape from such toils is ever effected at all. In some instances this is only accomplished after the physical constitution of the victim has been completely ruined ; in others the termination of the experiment is reached in the asylum or in some institution for the cure of nervous disease. It is surely here, not in their exalted utterances and moral platitudes, that the true fruits of these intelligences are to be found — (Raupert, *Modern Spiritism,* p. 153).

[2] In order that I may know what another man is thinking, it is not sufficient that he should be willing to lay bare to me his thoughts. There is between us a dividing wall in the shape of our bodies, which are the envelope of the soul and which prevent the free intercourse between our minds. This impediment is overcome by the signs which we use in order to manifest our ideas. . . But, in the case of the angels, there is no such impediment. The one thing necessary for communication between spiritual intelligences is that one should be willing to manifest his thoughts, and that the other should turn to consider them. This manner of communication holds

Intelligitur denique, *(d)* quam essentiale sit discrimen inter phænomena spiritismi et miracula; miracula enim Deum solum habent auctorem, facta vero spiritistica efficiuntur a dæmonibus non nutu et imperio, sed suas vires exercendo, et vires in natura contentas, quas intime cognoscunt, dextre applicando.[1]

Unde, quisque facile concedet facta spiritistica nullam præ se ferre similitudinem cum miraculis primæ et alterius classis (n. 149). Cum miraculis tertiæ classis *quoad effectum* convenire quidem possunt, minime vero *quoad causam;* quænam autem sit causa cujuspiam effectus miri dijudicandum est ex hic dictis et ex indiciis supra relatis.

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good also in the case of human beings with pure spirits, for to the latter the body constitutes no impediment; consequently, if we wish to lay bare our secret thoughts to an angelic being, it suffices that we be willing to do so, and that the angel should direct his attention to our thoughts — (**Lépicier,** *The Unseen World,* p. 45).

[1] St. Thomas, speaking from the standpoint of Christian Revelation, and consequently taking for granted that there are good spirits and evil spirits, lays it down as an evident corollary of revealed doctrine that God, whilst using good angels as moral instruments for miraculous effects, never grants to evil spirits greater power than they have by nature, but, on the contrary, often restrains their natural energy. Whatever such spirits do, is done, as the Angelic Doctor says, by skilfully utilizing through motion the potential energies latent in nature — *adhibendo corporalia semina per motum localem.* This they do with an incredible velocity, and an insight into possible combinations of natural forces of which man can form no idea — (**Boedder,** *op. cit.,* p. 430).

PSYCHOLOGIA

PROŒMIUM.

162. Psychologiæ nomen ex græco (ψυχή λόγος) idem sonat ac *sermo de anima;*[1] quum autem anima sit principium intrinsecum, quo vivens corporeum constituitur, *Psychologia* recte definiri potest : *scientia metaphysica corporum viventium naturali lumine comparata.*

Dicitur 1°. *scientia* **metaphysica,** quia, utpote pars philosophiæ, non versatur circa vitalia phænomena et functiones, quæ non transcendunt materiam sensibilem *in communi* (*Log.,* n. 129), sed circa suprema hujusmodi phænomenorum et functionum principia seu causas tum externas tum internas. Jam, eo, quod munus est metaphysicæ inquirere in intrinseca entium *realium* principia constitutiva eorumque causam efficientem et finalem, jure Psychologia scientia *metaphysica* reputatur.[2]

[1] As a distinct science, psychology owes its origin to Aristotle, whose «*Peri Psyches*» is, in all probability, the first formal treatise on the subject. . . Literally translated, the title of Aristotle's work signifies a *treatise concerning the soul.* It set a precedent for the scholastic doctors of the thirteenth century, and *de anima* became with them a technical designation for all works dealing with this theme. In the sixteenth century the selfsame usage was embalmed in the Greek term psychology. . .

Towards the close of the seventeenth century, however, the meaning of the term in question began to undergo a marvellous evolution, of which the end is not yet. The process was initiated by Descartes, under whose auspices psychology was changed from a science of the *soul* into a science of the *mind.* Then, under the influence of Hume and Kant, the *noumenal mind* disappeared, leaving only *phenomenal consciousness.* Recently, with the advent of Watson, even consciousness itself has been discarded, and psychology has become a science of *behaviour.* And here, for the time being, at any rate, the process has come to a stop, just one step short of complete nihilism. Woodworth quotes the following waggish comment: First psychology lost its soul, then it lost its mind, then it lost consciousness: it still has behaviour of a kind» — (**Barry-O'Toole,** *The Case against Evolution,* pp. 196-8).

[2] «Merito metaphysicæ tractationi de corporibus viventibus no-

Dicitur 2°. *corporum* **viventium**, quia psychologia nec animam solam nec corpus solum, sed corpus animatum considerat ; et sane, etiam quum agit de natura animæ humanæ innititur in operationibus, quæ aliquo modo a corpore et anima tamquam principio communi emergunt.[1]

Dicitur 3°. *lumine* **naturali** *comparata*, quia plures veritates circa ultimas causas viventium, et præsertim hominis, lumine *supernaturali* cognoscimus, quas veritates, saltem prout revelatas, non est psychologiæ exponere.

163. Consectaria. 1°. Anima est objectum proprium psychologiæ, non quidem anima in se considerata, sed prout est pars corporis organici. Unde, objectum *materiale* psychologiæ sunt *corpora viventia ;* objectum autem *formale* sunt horum *ultimæ causæ intrinsecæ et extrinsecæ*.[2] Jam-

men factum est *psychologiæ* seu *scientiæ de anima*. Anima enim est vitæ corporalis causa interna ultima : quoniam igitur ad scientiam metaphysicam spectat (de metaphysica loquor in sensu lato et minus proprio) causas investigare ultimas, anima idipsum est quod ejuscemodi scientia in corporibus viventibus, instar proprii seu formalis objecti, prosequitur. Hoc itaque *psychologiæ* nomine et objectum nostri tractatus complete declaratur et ratio exhibetur maxime propria, qua is a finitimis tractationibus secluditur » — (**De Backer**, *Meta. Specialis,* v. ii., p. 8).

[1] Psychology does not view the mind as independent and apart, but treats of the phenomena of consciousness in themselves as such, in their relations to the principle producing them, *i.e.*, the soul, and to what conditions their exercise, *i,e.,* the bodily organs. Hence, its complete subject-matter is animated body or a « sound mind in a sound body ». It places before our view all the operations and phenomena of our conscious life. Thus it investigates sensations, thoughts, wishes, desires, feelings, imaginations, memories, affections, and emotions. It formulates the laws which rule their working, and finally from these, as data, determines what we are to hold concerning their source or internal cause, and the relation of this principle to the bodily organism — (**Driscoll**. *The Soul,* p. 2).

[2] Whether it wishes it or no, psychology is inevitably a branch of philosophy. It cannot remain satisfied with the mere generalization of facts ; it must pass on to inquire into the inner nature and constitution of the root and subject of these phenomena ; it must seek to explain the effect by its cause. Consequently, a work which does nothing more than describe and classify the operations of the mind, omitting all discussion regarding the mind itself, is but an abortive attempt at a science of psychology. *La psychologie sans âme,* is Hamlet without the Prince of Denmark... What is the

vero, psychologia ratione ejus objecti *formalis* distinguitur ab aliis scientiis, quæ etiam circa corpora viventia versantur, sed ita, ut earum objectum formale non excedat experientiam sensibilem, quæque nomine generico biologiæ comprehendunt ut. Tales sunt imprimis *(a) physiologia,* quæ de organis eorumque functionibus agit; *(b) anatomia,* quæ organismi partes describit; *(c) botanica* et *zoologia,* quæ externam structuram plantarum et animalium describunt;[1] *(d) chimia organica,* quæ investigat cellulas, quibus organa coalescunt, atque mutationes chimicas, quæ in organismi formatione et evolutione interveniunt.

2°. Quum prima principia constitutiva viventium, quæ psychologia explorat, experientiæ non sint subjecta, sed ex factis experientiæ inferri debeant, necesse est, ut, quæ scientiæ biologicæ cum certitudine tradunt circa proprietates et operationes magis obvias viventium, ea psychologia accipiat simul cum factis quotidianæ observationis tamquam fundamentum ad suas proprias inquisitiones prosequendas. Unde, psychologia et scientiæ cognatæ sibi invicem auxilium afferunt, et de viventibus unam scientifice completam cognitionem suppeditant, dum ex una parte hæ scientiæ accurate et minutatim pertractant omnia vitæ phænomena, quæ sensibus sunt quovis modo

meaning and value of life? What are we? Whence came we? Wither go we? These have ever been questions of profound interest to the human race, and it is the belief that psychology can throw some light on them which has always vested with such importance this branch of philosophy — (**Maher**, *Psych.*, p. 2).

[1] The term ***biology*** is sometimes used in a wide sense to embrace all the branches of knowledge which treat of the phenomena of life. More properly, it comprehends two co-ordinate physical sciences: *morphology*, which investigates the structure of living organisms, and ***physiology***, which investigates their functions. . . The physiologist studies the various operations of our vegetable life, he examines into the action of digestion, respiration, growth, nutrition, and the other vital processes which take place within us. He observes the working of our several organs, and seeks to enunciate laws that will express the general uniformities exhibited in the aggregate of operations which go to constitute our physical life. These events are perceived by the external senses, and are ultimately reducible to movements in matter — (**Maher**, *op. cit.*, p. 9).

pervia; et ex altera parte psychologia harum scientiarum certa inventa certasque inductiones amplectens, intimam viventium constitutionem perscrutatur, primasque causas vitalium operationum et proprietatum demonstrat. Non sunt igitur audiendi materialistæ et extremi evolutionistæ, qui conclamant dissidium existere inter psychologiam scholasticam et certa scientiarum naturalium pronuntiata; non enim cum *certis* cujuscumque scientiæ naturalis conclusionibus pugnat psychologia, sed cum gratuitis hypothesibus, quas tamquam veritates experientia et legitima inductione compertas osores Fidei et veritatis venditant.

164. Psychologiæ Divisio. Notum est tria genera viventium corporeorum existere: homines, bruta, plantas. In homine triplex manifestatur vita, *scil.*, intellectiva, sensitiva, vegetativa; in bruto duplex, *scil.*, sensitiva et vegetativa; in planta vero nonnisi vita vegetativa habetur. Jamvero, juxta hanc vitæ et viventium partitionem apte institui potest divisio psychologiæ in tres partes, quarum prima erit *de vita in genere* et *de vita vegetativa,* altera *de vita sensitiva,* tertia *de vita rationali,* quæ est proprium hominis, *prout est homo.*[1]

[1] Aristotle, though he did not separate the science of the soul from physics and metaphysics, yet made a special study of it. . . He regarded it as part of physics (the science of nature) which itself depends on first philosophy or metaphysics, the science of the principles of all being. Its method is that of every science, namely, observation and analysis, but always from a speculative and metaphysical point of view. And now what does this science deal with? Aristotle does not admit the existence of the world-soul. He does not exactly look upon the world as an organized living whole, as an animal governed by one and the same soul, but rather as a collection of beings united only by a common tendency towards a higher end, towards a perfection that is above them all. The science of the soul is, with him, a general and comparative science of every kind of soul, of the soul which is the principle of organization in plants, which is the cause of motion and sensation in animals, and which thinks in man. The soul is the principle of life, which in the case of man rises to intelligence — (Janet and Seailles, *History of the Problems of Philosophy,* v. i., p. 30).

Some philosophers include among the data of cosmology all the phenomena of vegetative life, reserving sentient and rational life for psychology; others include even sentient life in cosmology, reserving the study of human life for psychology. . . Seeing, how-

PSYCHOLOGIÆ PARS PRIMA.

De Vita in Genere et de Vita Vegetativa.

CAPUT PRIMUM.

ART. I.

DE VITÆ NOTIONE ET DE EJUSDEM GRADIBUS.

§ 1. De Vitæ Notione.

165. Ut genuina vitæ notio attingatur, oportet observare quid præ mente habeamus, quando dicimus aliquid *vivere*. Enimvero, tunc aliquid vivere seu vitam habere existimamus, quando incipit se movere secundum quamlibet speciem motus, et tamdiu illud vivere judicamus, quamdiu sui motum in eo perspicimus. Præterea, « illa, quæ videntur *per se moveri,* quorum motores vulgus non percipit, *per similitudinem* dicimus vivere, sicut aquam *vivam* fontis fluentis, non autem cisternæ vel stagni stantis » (**S. Th.**, *C. Gent.,* lib. 1, c. 97). Unde, ens *vivens* dicitur illud, quod seipsum movet vel saltem movere potest ; *vita* autem est *principium, quo ens est capax seipsum movendi* seu *immanenter operandi.*

Dicitur 1°. *principium,* ut vita proprie dicta et in *actu primo* distinguatur a vita in *actu secundo* seu ab operationibus, quæ ex vita in actu primo tamquam ex proprio principio promanant. Quod principium, si consideratur ut id *quod* vivit, non differt a subjecto vivente; si vero spectatur ut id *quo* subjectum vivit, est, *(a)* in ordine physico, ipsa anima, quæ ideo vocatur *principium vitæ ; (b)* in ordine autem metaphysico, est illa formalis ratio, qua res constituitur vivens, et a non viventibus distinguitur *(cf.* n. 168).

Dicitur 2°, *quo ens est* capax *seipsum movendi,* quia ad essentiam vitæ non requiritur actualis sui motus, sed tan-

ever, that man embodies in himself all three forms of life, vegetative, sentient, and rational, all three would perhaps more naturally belong to psychology, which would be the philosophical study of life in all its manifestations — (**Coffey, *Ont.,*** p. 19).

tum aptitudo ad talem motum exercendum; nec desunt facta haud obscura vitæ latentis sive in lethargicis, sive in animalibus et plantis congelatis aut desiccatis,[1]

Dicitur 3°. *capax* seipsum *movendi,* ut indicetur discrimen essentiale inter viventia ac non viventia; hæc enim habent principium motus passivum tantum, seu moveri possunt; illa vero id proprium habent, ut sint simul principium activum et passivum, seu ita moventur, ut ipsa sint motores.[2]

166. Nomine « motus », « movere », in hoc contextu

[1] The length of time during which life may remain absolutely latent in seeds continues to be one of the mysteries of biology. Some very curious observations have been made on this matter in recent years. In certain places in our Western States, where hydraulic mining operations have been carried on on a large scale, and where large quantities of earth have been transported to a distance by means of water, occasionally trees have sprung up of kinds previously unknown, either at the point where the dirt came from, or at the place it was deposited. The suggestion is very near that seeds may have been buried at some distance in the ground and may somehow have preserved the germ of life for many hundreds of years or even longer. In some earth obtained from a great depth in excavations for a quarry near Paris a new kind of rush, hitherto unknown in the neighbourhood of Paris, began to grow luxuriantly. In another part of France alders suddenly began to grow in profusion where this tree was previously unknown, nor had it been supposed to grow anywhere in the neighbourhood for as long as there were any records. It has been supposed that some drainage operations exposed seeds that have been in the earth for a long time, yet retrained all their vitality —(«The Dolphin», July, 1903, p. 82).

[2] By the light of facts disclosed to us by scientific observation we have to find what is the peculiar character of vital activity. How is it differentiated from the activity of lifeless matter? We discovered that it is, by its nature, *continuous* and *immanent*. Vital activity is *continuous*. — Inanimate nature tends to stability: a lifeless body left to itself tends to a state of equilibrium... A living being, on the other hand, *tends to keep in continuous motion*: nutrition in particular is an incessant movement of alternate assimilation and dissimilation... This movement, it is true, may become so slight as to be almost imperceptible in the state of latent life, but it never ceases altogether; once it stops death ensues, or rather has already taken place. This continuousness of vital movement is not however the chief feature of life: its essential characteristic is immanence... The first element, continuous movement, represents the proximate *genus* in the definition; the second, immanence, is the *specific difference* — (**Mercier**, *Manual*, v. i., p. 169).

intelligitur non solum motus localis, sed quævis activitas interna (sive vegetativa sive sensitiva sive intellectiva), quæ in ipso agente manet. Siquidem vero vita de Deo prædicatur(« Ego sum vita »), sed non eodem modo ac de creaturis, «motus», quatenus imperfectionem importat, a notione divinæ vitæ ablegandus est. Quod quum fit, restat essentia vitæ, prout est pura perfectio. Nam ad rationem vitæ, qua talis, sufficit, *(a)* ut vivens sit *ratio* actionis vitalis ; minime autem requiritur, ut vivens sit *causa* actionis; *(b)* ut actio vitalis sit *perfectio* viventis; haud vero requiritur, ut actio vitalis immutet vivens illique *adjiciat* perfectionem, qua prius carebat. «Nec (ut sapienter notat Schiffini, *Cosm.*, p 102) est de ratione operationis vitalis, prout hujusmodi, ut mutationem aliquam in re vivente ponat vel supponat. Nam, etiam in facultate creata, generalis ratio *effectionis*, nedum *actionis*, differt oppido a ratione *mutationis* : ut patet in intellectu nostro, non quidem in ipso primo instanti, quo de actu non intelligente evadit actu intelligens, sed in instantibus subsequentibus, in quibus eadem numero intellectio perseverat. In his enim adhuc intellectio active et effective procedit ab intellectu, qui propterea vere et proprie vivit, prout vita pro operatione vitali accipitur : nec tamen ulla tunc mutatio existit. Neque obstat quod, ad vitæ operationem designandam, vocabula, quæ motum significant, adhibeamus. Id enim idcirco fit, quia sicut motus est actus mobilis, ita operatio vitalis est perfectio viventis ».

167. **Consectaria.** 1°. Vita in actu primo est per se et semper *intelligibilis*, secus ac vita in actu secundo, quæ per se, etsi non semper, est *sensibilis* ; et proinde, dum hæc in viventibus terrenis ad scientias experimentales pertinet, illa nonnisi a scientia metaphysica investigatur. Per unam, ope sensuum, distinguimus viventia a non-viventibus; per aliam, ope rationis, detegimus ultimam causam intrinsecam cur differant.

2°. Vita in actu primo est attributum essentiale omnis viventis; vita in actu secundo est in Deo attributum essentiale, in creaturis vero est dumtaxat accidentale. Exin-

de intelliguntur effata: *(a) vita viventibus est* esse, quod quidem significamus, quando dicimus: Petrus adhuc *vivit* vel *non vivit;* et *(b) vita in* motu, quod significamus, quando dicimus: Petrus *bene vivit* (i. e., bene se gerit). Merito igitur scholastici vitam in actu primo *vitam substantialem* nominant, quum sit ipsum esse viventis; et contra, vitam in actu secundo *accidentalem* vocant, quia consistit in operationibus, quæ tamquam accidentia viventi inhærent.

3°. Actio vitalis, seu actio qua ens seipsum movet, perinde est ac actio *immanens*. Immanentia actionis duo importat: *(a)* ut actio procedat a principio agenti intrinseco; *(b)* ut in ipso agente recipiatur. Unde, vivens est simul *principium* et *terminus* suæ operationis, et proinde, quum terminus seu fructus operationis maneat in agente, proprium est operationis vitalis *agens perficere*. Omnis igitur operatio, quæ transit ad perficiendum subjectum externum, est, *qua transiens,* non-vitalis. Dicimus *qua transiens,* quia eadem operatio, quæ per se et primario est immanens et vitalis, per accidens et secundario potest effectum externum producere; et quantum ad hoc est *transiens* et *mechanica*. Sic, actio artificis moventis instrumentum non est vitalis, quum talis motio ope alicujus machinæ confici possit; actio autem, qua artifex movet manum ad movendum instrumentum est actio vitalis.

Dices: Corpora elastica, si post compressionem sibi relinquuntur, se movent ad recuperandam suam formam pristinam; *ergo* non est necesse, ut actio immanens sit actio vitalis seu a vivente procedat.

Resp. Corpus elasticum, quando ad suam naturalem dispositionem tendit, vere se movet ut principium *quo* illius motus, *conc.*, ut principium *quod, neg.* «Licet corpora inanima quandoque, cum sint extra dispositionem naturæ suæ debitam, naturaliter moveantur sine nova motione exterioris agentis ad illam dispositionem recuperandam; nihilominus motus ille dici nequit operatio vitalis, quia non procedit ab ipso corpore, tamquam principium *quod* motus, sed solum tamquam a principio *quo;* nimirum, corpus nactum est a generante talem naturam seu formam quam consequitur quædam naturalis dispositio, a qua si removeatur per agens extrinsecum, naturaliter redit ad pristinum statum simul ac cessat influxus illius agentis: ideoque verum movens vel principium *quod* illius

motus est generans, qui talem formam dedit, quam illa naturalis inclinatio consequitur, quæ est verus effectus actionis generativæ. Ex opposito in viventibus naturales illi motus tum maxime habentur, cum vivens versatur in debita et perfecta dispositione suæ naturæ, ideoque non possunt refundi in generativam, quæ et formaliter et virtualiter cessavit; sed a vivente procedunt, tamquam a principio *quod* sese agit ad motum » (**De Maria**. *Cosm.*, p. 159).

4°. Conceptus essentialis actionis vitalis non consistit in eo, quod vivens se movet ab intrinseco, ut quidam docent (v. g., *Zigliara)*, sed in immanentia operationis. Etenim conceptus essentialis actionis reponendus est in illa nota, sine qua ista actio intelligi nequit; *atqui* sine nota immanentiæ conceptus actionis receptæ in subjecto, a quo procedit, minime efformari potest.

168. *Dices* 1°. « Prius concipienda est actio vitalis in seipsa quam concipiatur ejus modus vel proprietas». *Resp.* Prius... quam concipiatur ejus modus accidentalis, *trans.*, ejus modus formaliter constitutivus, *neg.* Num immanentia sit merus modus vel proprietas actionis vitalis est ipsa quæstio determinanda.

Dices 2°. « Actio vitalis in se considerata essentialiter requirit quod sit a principio intrinseco viventis ».

Resp. 1°. Actio non vitalis idem requirit, id quod omnes, occasionalistis exceptis, aperte docent.

Resp. 2°. Actio vitalis importat *(a)* actionem *ab intrinseco principio* procedentem, — hoc exprimit *genus,* in quo actio vitalis cum actione non vitali convenit; *(b) terminum* ejusdem actionis in agente, — hoc constituit *differentiam* actionem vitalem a non vitali specifice distinguentem. Non igitur in processione a principio intrinseco consistit formalis conceptus actionis vitalis, sed in ejusdem immanentia.[1]

[1] The scholastics defined life as, *activitas qua ens seipsum movet*. . . The feature insisted on as essential is the *immanent* character of the operations. An immanent action is one which proceeding from an internal principle does not pass into a foreign subject, but perfects the agent — (**Maher**, p. 551).

Voilà ce qu'est le mouvement en général. C'est l'élément *générique* de la définition de la vie. La *différence spécifique* réside

§ 2. De Vitæ Gradibus.

169. Vivere est agere immanenter. Immanentia vero actionis duo involvit: ut actio procedat a principio intrinseco, et ut in ipso agente actio terminetur. Eo igitur perfectior est vita, *(a)* quo independentius ab influxu principii extrinseci actio procedit ab agente; *(b)* quo plenius recipitur in agente. Ex hoc duplici capite ostendi potest tres esse gradus vitæ.

170. **Quoad independentiam operationis.** Tria sunt, quæ influere possunt in actionem, *prout ab agente procedit,* scil. *finis,* propter quem actio fit; *forma,* secundum quam actio fit; ipsius actionis *exsecutio.*

Jamvero, eo perfectius est vivens, quo plura ex his in seipso habet. *Atqui* unum est genus viventium *(vegetalia),* quæ *exsequuntur* quidem operationes vitales, « sed *forma* per quam agunt, et *finis* propter quem agunt, determinantur eis a natura » (**S. Th.**, 1, q. 18, a. 3).

Alterum est genus viventium *(animalia),* quæ operationes vitales *exsequuntur,* et sane secundum *formam* (cognitionem sensitivam) ope suarum facultatum habitam, *finis* autem actionum ab Auctore naturæ eis præstituitur.

Tertium est genus viventium *(entia intellectu prædita),* quæ in seipsis habent non modo *exsecutionem, formam* (cognitionem intellectivam), sed (quippe quæ rationem finis et medii eorumque mutuam relationem cognoscunt) *finem* suis operationibus præfigere possunt.

Quoad receptionem in agente. Triplici modo potest operatio recipi in agente: *(a)* aut enim recipitur in toto subjecto, a quo procedit, ut accidit in vita *vegetativa;* totus enim organismus nutritur et augescit; *(b)* aut recipitur in speciali organismi parte, *scil.,* in organo, ut fit in vita *sensitiva* (sic videmus *oculis,* etc.); *(c)* aut recipitur in facultate nulli organismi parti inhærente, ut fit in vita

dans l'*immanence* du mouvement vital — (**Mercier**, *Psych.*, v. i., p. 53, ed. 7).

« In conceptu vitæ motus est quid prius et *communius,* immanentia est quid *magis determinans* ac *magis specificum* » — (**Hugon**, *Biol. et Psych.*, v. i., p. 14; cf. *Monaco, Psych.*, p. 57).

intellectiva; operationes enim intellectivæ non recipiuntur in composito, sed in ipsis facultatibus intellectivis. Ratione igitur habita sive independentiæ operationis sive ejusdem in agente receptionis, tres gradus vitæ distinguendi sunt, nimirum, *vita vegetativa, vita sensitiva, vita intellectiva*. Porro, vita intellectiva est et ipsa triplex: *humana, angelica, divina*. Nam operationes hominis propriæ exercentur cum dependentia externa ab organis; angelicæ operationes exercentur per species non a rebus externis haustas sed simul cum angelica natura datas; operatio divina nullam habet dependentiam a rebus externis, quum divina operatio sit infinita divina natura.

ART. II.

DE PRINCIPIO VITÆ.

§ 1. De Existentia Primi Principii Vitæ.

171. THESIS XXI. — Agnoscendum est in omnibus corporibus viventibus primum principium vitæ a viribus materiæ plane diversum.

Stat. Quæst. — Thesis statuitur imprimis contra materialistas, qui omnem activitatem vitalem repetunt a materia bruta, nimirum, conantur phænomena vitæ explicare mere mechanice per atomorum vibrationes vel per vires physicas ac chimicas.[1]

[1] What is *life* according to the materialists? . . . Life, they tell us, is a purely mechanical phenomenon due to affinities of ordinary matter. But their own words lend their theory a picturesqueness of which it ought not to be shorn. Says Tyndall: — « It is the compounding, in the organic world, of forces belonging equally to the inorganic, that constitutes the mystery and miracle of vitality ».

Huxley is equally positive and picturesque: « We know (!) that the phenomena of vitality are not something apart from other physical phenomena, but one with them; and matter and force are the two names of the one artist which fashions the living as well as the lifeless ».

Herbert Spencer's statement of the fact is as unqualified as an advertisement: — « That the forces exhibited in vital actions, vegetable and animal, are similarly derived [as the inorganic actions], is so obvious a deduction from the facts of organic chemistry that

Nec materialistæ tantum, sed alii a materialismo prorsus alieni reperiuntur, qui contendant vitam, non quidem intellectivam vel sensitivam, sed vegetativam explicari posse per vires materiæ absque speciali vitæ principio. « Quæritur (inquit **Tongiorgi**, *Psych.*, p. 22) quid sit quod viribus materiæ brutæ additum, una cum eis vim vitalem efficit. Nostra sententia est non esse opus ut admittamus in vegetalibus realitates aliquas materiæ superadditas, sed satis esse vires inorganicas *sub quibusdam conditionibus operantes;* has vero conditiones *artificiosa organismi constitutione* contineri ».

Scholastici, dum admittunt principium vitale a materia ejusque viribus diversum, has vires minime excludunt, immo profitentur totum processum vegetativum in plantis, et vegetativum ac sensitivum in animalibus, multum dependere a viribus physicis et chimicis, quatenus hæ sunt instrumenta principii vitalis, et ab ipso diriguntur et elevantur ad efformandum, evolvendum, et conservandum organismum adaptatum ad operationes vitale diversas pro diversitate principii peragendas.[1]

it will meet with ready acceptance from readers acquainted with these facts ».

Here, then, are what, in the case of most men, we should be bound to accept as statements of *facts*. Their words leave no room for a second opinion. It is not a question of hypothesis. We are told in so many words that vitality is as mechanical as the force by which a magnet draws iron or a stone falls to the ground — (**Gaynor**, *The New Materialism*, p. 49).

[1] I agree with Driesch, Reinke, and other vitalists in thinking that if we are to attain to a perfect explanation of the phenomena of life from its first manifestation, we must still accept *formal principles* of the type of the Aristotelian *entelechies*. We have not as yet any chemical and physical formula which explains life satisfactorily and finally. Scientists hope that at some future time an explanation may be found, but I believe this hope is unlikely to be realized. What we call life is something quite different from all the material, chemical and physical processes which are subordinate to the functions of life. Natural science, therefore, compels us to assume certain formal principles, which are not makeshifts meddling with material energy, nor do they disturb the permanence of the law of energy; they simply direct the lower energies, quicken to life the atoms hitherto dead by absorbing them into the organism, and, in short, effect *the purpose* of the vital process by

172. Prob. Thesis. Arg. — Quum omnis effectus præsupponat causam proportionatam, si in viventibus corporeis manifestantur operationes et proprietates ab operationibus et proprietatibus non viventium essentialiter diversæ et altioris ordinis, necesse est, ut viventibus insit aliquod principium a principiis et viribus brutæ materiæ essentialiter diversum et altioris ordinis; nam essentialis diversitas principii diversitate operationum et proprietatum se prodit. *Atqui* in viventibus tales operationes et proprietates manifestantur; *ergo*.

Prob. min. Pars 1ª. **Manifestantur operationes**. . . Nam habetur operatio, qua corpus vivens per assimilationem exterioris substantiæ se totum efformat ex minutissima cellula; organismus enim primario constat unica cellula, seu, est corpusculum nucleo, protoplasmo et membrana coalescens; hæc vero cellula alimenta intussuscipiens se nutrit, evolvit atque multiplicat in alias cellulas, quæ et ipsæ simili processu se evolvunt in organismum embryonalem. Qui organismus mira cum constantia pergit se evolvere juxta typum prædefinitum, donec efformatur perfectus organismus variis partibus ad unum finem conspirantibus instructus. Jamvero, talis complexus operationum est omnino diversus et altioris naturæ, ac operationes physicæ et chimicæ, quæ in bruta materia exseruntur; harum namque operationes *transeunt* in subjectum externum, minime vero terminantur in ipso agente, ut illud ab intrinseco augescat, evolvat, et generatione reproducat. Præterea, corpus eadem virtute, qua sese efformat, potest se conservare ac partes amissas plus minusve reparare. Etenim inter diversas organismi partes viget præclarus ordo, quo functiones inferiores superioribus peragendis subserviunt, ac omnes communiter in id tendunt, ut typus individualis servetur et bonitati individui consulatur, non obstante jugi immutatione materiæ, qua organismus coa-

action from within. This postulate is eminently reasonable — I personally cannot dispense with it, and should not be able to dispense with it, even if theology did not exist — (**Wasmann**, *The Problems of Evolution*, p. 30).

lescit. Ista autem amica tendentia explicari nequit, nisi detur in viventibus aliquod principium, quod vires et functiones inferiores regat atque ad finem proprium dirigat. Si enim illæ tantum vires in viventibus se exsererent, quæ etiam in non viventibus vigent, fieri non posset, ut viventia legibus propriis regerentur, et operationes et effectus ab operationibus et effectibus non viventium essentialiter diversos producerent.[1]

[1] The living being from conception to death passes through a fixed cycle of changes constituting its life's history, and generically distinguishing it from all forms of inanimate matter. Starting from a single germ-cell the animate organism builds itself up after a regular process which is practically the same throughout the animal kingdom (Idem suo modo dicendum est de regno vegetali). By its peculiar inherent energy the fertilized ovum appropriates and adapts to its own use the surrounding nutritive matter. Assimilating this substance it grows, and then divides into two distinct though connected cells. Each of these subdivides and by repetition of the process the number of cells soon becomes enormous. But this multiplication of cells speedily begins to reveal that the energy of the primitive germ is throughout all the operations working after a systematic plan. The embryo commences to take a definite shape. . . . The fertilized ovum is not a ready made miniature organism with differentiated members merely needing to be unfolded and magnified. On the contrary it is a microscopic ball of protoplasm containing no rudiment of any organ. But this tiny, spherical mass of living matter posesses the marvellous power of dominating the physical and chemical properties and affinities of other matter, of converting this into cells like itself, and of multiplying these and arranging and distributing them till it has built up the complete fully developed animal (vel plantam). The germ-cell *thus makes its own organism.* Throughout life a process of metabolism, or waste and repair is continued; and according as one or other is more active; we have growth or degeneration. The living being is ever actively *adapting itself* to changes in its environment. If any part of the organism accidentally suffers injury, this vital energy which penetrates the entire mass at once lays a levy upon the remaining parts and combines their forces to repair the evil; and they all show sympathy and contribute out of their resources or lessen their own demands till the damage is made good or the wound healed. This cycle of life has absolutely no counterpart in inanimate matter. The conservation of the latter is effected by a state of changeless repose. If increased it is by mere external addition or juxtaposition of similar substance. A mass of lifeless matter possesses no real unity — no part having more than an accidental connection with or influence upon any other part. Even the crystal, on which advocates of physico-chemical theories of life

Nec prætermittendi sunt influxus externi, qui in processu vitali *per accidens* eveniunt, quum exinde valde confirmetur realitas principii vitalis. Quando enim organismus morbo aliave causa externa a suo cursu vel statu naturali deflectitur, huc sese sua virtute interna reducere conatur, quodque sane plus minusve semper efficit. *Atqui* talis effectus minime tribuendus est nudis naturæ physicis viribus, sed principio ab ipsis distincto, quo diriguntur, ut bonum viventis procurent; *ergo*.[1]

have so much insisted is a mere aggregate of molecules, the well-being or ill-being of any of which affects not the rest.

These various features mark off by an impassable barrier the living organism from dead matter; and constitute against *Organicism* a cogent proof of the existence in living beings of a special dominating principle or energy superior to the properties and forces, of inanimate substances. The several processes of nutrition, growth, conservation, and reproduction constitute a group of operations completely transcending the chemical and mechanical powers of matter. The innate tendency to build itself up according to a specific type, to restore injured or diseased parts, to conserve itself against the agencies perpetually working for its dissolution, and to reproduce its kind, manifests an internal principle which unifies, dominates, and governs the entire existence of the being. On the strength of the axiom that every effect must have an adequate cause, we meet a special ground for vital phenomena in those material substances which possess life. . . The more we know of chemistry and physics on the one hand, and the better we understand the nature of cellular activity on the other, the more hopeless do physico-chemical theories of life become. We are justified, then, in assuming a new internal energy, a directing force which determines and governs the stream of activities described as the phenomena of life. This force is what is meant by the so-called «*vegetative soul*» or «*vital principle*» — (Maher, pp. 547-551).

[1] If there is one thing which is quite clear about chemical and physical processes, it is that they are rigid and unvarying. So far as we know, a certain result is attained by one series of steps, and by that series alone, and any interference with that series leads to a collapse of the whole affair and a failure to achieve the end which would otherwise have been reached.

This is not the case in the process of development; for the egg possesses a power by which it is absolutely able to modify the course of nature and to arrive at its destination by a road never previously utilized by any egg. . . We may consider certain experiments in the modification of the development of the eggs of frogs and sea-urchins. . . Now the process of this development has been much modified by placing the egg between plates of glass so that it must develop under pressure. As a result of this pressure it be-

Pars 2ª. **Manifestantur proprietates**... Et quidem viventia et non viventia differunt: —

1°. **Figura**, quæ eadem est in singulis viventibus ejusdem speciei, diversa autem in diversis; viventia præterea per totum in minimis suis partibus terminantur lineis curvis, quæ quasi indicant actiones viventis ipsi reverti seu immanentes esse. Non viventia vel nullam exhibent figuram determinatam vel, si in crystallizatione nullum patiuntur impedimentum, superficies planas et lineas rectas sibi assumunt. In viventibus, secus ac in non viventibus, partes heterogeneæ sunt, singulæque propriam habent functionem ad bonum totius ordinatam.[1]

2°. **Origine**; nam viventia non oriuntur nisi generatione proprie dicta, *i.e.*, aliis viventibus ejusdem speciei propagantur; non viventia producuntur generatione improprie dicta, *v.g.*, chimica analysi vel synthesi corporum ab ipsis specie differentium efficiuntur.

comes impossible for the rapidly increasing number of cells to arrange themselves in a sphere as they would naturally have done, and they were forced to develop in a plane between the two sheets of glass. If the process were carried on too long the result would be the death of the developing creature from sheer want of room, so it must be released after the experiment has gone a certain distance. What then happened? The egg goes on its way segmenting as if nothing had happened: there is no rearrangement of the nuclei, a most significant fact, and finally a perfectly normal larva of frog or sea-urchin is the result. That is, a frog or sea-urchin has been developed by means of a series of events which one may safely say had never occurred before, a tolerably clear proof that there is within the egg a power which is able to steer it through seas before unsailed by any egg — (**Windle**, *What is Life?* p. 63).

[1] Living bodies are not simple geometrical forms, not, like crystals, merely a typical arrangement of surfaces in space, to be reduced theoretically, perhaps, to an arrangement of molecules. Living bodies are typically combined forms; that is to say, they consist of simpler parts of different characters, which have a special arrangement with regard to one another; then these parts have a typical form of their own and may again be combinations of more simple different parts. But besides that, living bodies have not always the same typically combined form during the whole of their life: they become more complicated as they grow older, they all begin from one starting point, which has little form at all, viz., the egg — (Driesch, *The Science and Philosophy of the Organism*, v. i., p. 20).

3°. **Chimica combinatione**; viventia enim sunt omnia composita, et quidem ex elementis, quæ in ordine ad organismum constituendum uniuntur in composita sui generis, quæ nimirum nonnisi in viventibus naturaliter exurgunt. Quæ composita, licet iisdem constent elementis, quibus et anorganica, hoc tamen habent proprium, quod secundum proportiones valde complexas, etsi ex parvo numero elementorum, coeunt;[1] ex qua fit, ut sint nimis

[1] At present our knowledge of the molecular structure of the proximate ingredient of protoplasm is very meagre. The simplest of these organic compounds have very large molecules, often with more than a thousand atoms. The formula for a molecule of albumen has been given as C_{72} H_{106} N_{18} SO_{22}, and for hæmoglobin C_{600} H_{960} N_{154} Fe_1 S_3 O_{179} — (**Herrick**, *Baldwin's Dictionary of Phil. and Psych.*, v. ii., p. 9).

When one reads about the chemistry of protoplasm, or about certain things in the cell which are studied by the aid of chemical reagents, it is always important to remembet that it is dead protoplasm and a dead cell which we are reading about, and that in that fact lies the possibility of a fundamental fallacy. With this reservation, then, we say, that protoplasm is composed of relatively few chemical elements. It contains carbon, which we know of, under one of its forms, as charcoal. It contains hydrogen and oxygen, two gases which enter into combination to form water, and it contains nitrogen, another gas, which with oxygen makes up most of the air which we breathe. These four substances are its most important constituents, but in addition to this there are minute quantities of other elements, notably phosphorus. It is not to the number of elements contained, then, that protoplasm owes its complexity. But there can be no doubt that the molecule or protoplasm, if indeed it is any way correct to say that protoplasm has a chemical molecule, must be one of enormous complexity. Again, however, it must be insisted that we know not what may be the actual state of affairs in living protoplasm, nor do we even know that the composition of the protoplasm in one part of a cell may not differ from that in another part, whilst that cell is alive. «Protoplasm», says Wallace, «is so complex chemically, as to defy exact analysis, being an elaborate structure of atoms built up into a molecule in which every atom must occupy its true place, like every carved stone in a Gothic cathedral». Pflüger, too, a very distinguished German physiologist, tells us that living proteid or protoplasm is a huge molecule, undergoing constant, never-ending formation and decomposition, and gives us an illuminating view of its characters when he says that it probably behaves towards the usual chemical molecules as the sun behaves to small meteors — (**Windle**, *op. cit.*, p. 20).

labilia et resolutioni chimicæ prona. Quæ proprietates sunt proprietatibus anorganicorum oppositæ.

4°. **Incremento**; viventia enim numquam ab initio plenam sibi debitam habent magnitudinem, sed paulatim illam attingunt per susceptionem substantiarum alimentariarum, quas adlaborant et hinc illinc diffundunt ad diversa organa construenda vel resarcienda;[1] non viventia aut retinent magnitudinem primitus acceptam aut crescunt per meram accessionem partium similium ad extra appositam.

Porro, viventia, licet possint, quoad magnitudinem, plus minusve se variare, tamen ultra definitos limites cuique speciei proprios progredi nequeunt; non viventia absque limite crescere possunt.

5°. **Duratione**; viventia enim, postquam ad debitam suæ speciei perfectionem pervenerint, mox ab intrinseco deficere incipiunt (etiam dum conditiones externæ eorum conservationi maxime favent), et ultimatim intereunt, se resolventes, non in alios organismos, sed in elementa materiæ brutæ; non viventia per se indefinitam habent durationem, nec suam integritatem et naturam amittunt nisi per actionem exterioris causæ ea in suas partes resolventis.[2]

[1] Though there be but a simple exchange of matter through the wall of the cell, a mere beginning of spontaneous movement, organic life moves on a much higher plane than the finest crystal. The plant takes root in the ground, draws its nourishment from the soil, carries the sap to the leaves and deposits it, after it has been decomposed by the sun and mixed with carbon, in its proper place. The animal lays hold of its food, grinds it mechanically with its teeth, moistens it with saliva, and passes it though the gullet into the stomach. The peristaltic motion of the stomach, combined with the action of the gastric fluid, converts it into chyme. Then it passes into the intestines, and with the aid of the bile becomes chyle. Then the nutritious portions are conveyed by a thousand channels to the several organs. The several forces at play can be detected in each stage of the process. But how comes it that these forces are combined so wondrously in the organic world, and nowhere else? whence comes that wonderful force that in all ages has been christened Life! — (**Schanz**, v. ii., p. 132).

[2] The crystal and the rock are, no doubt, exposed to final destruction, but the destruction does not come from within; damp,

Jamvero, memoratæ proprietates viventium, a proprietatibus non viventium prorsus diversæ, expostulant in eis principium a viribus materiæ essentialiter distinctum eisque altius.

173. Cor. 1. Ergo nil mirum quod chimici materialismo addicti frustra conantur arte elaborare corpus, quod operationes vitales exerceat. Admissa tamen opinione in thesi rejecta, nihil obstaret, quominus id efficerent. Nam imprimis in regno minerali nullum est compositum, quod chimice obtineri nequeat, si ejus innotescant elementa, et in regno vegetali et animali chimice componuntur substantiæ «organicæ», sed vitæ prorsus expertes.[1] Deinde, optime cognoscuntur omnia elementa, quibus coalescunt corpora organica, necnon proportiones, secundum quas hæc elementa organismum ingrediuntur, ac ea juxta has proportiones coadunari possunt, sed ex eis coadunatis resultat nec operatio vitalis nec imperfectissimum organismi rudimentum; id quod aperte probat inesse viventibus quoddam principium a viribus materiæ distinctum, quodque primitus materiæ infusum in plantis et brutis generatione propagatur.[2]

heat, chemical and physical forces in general help to wear them away. Were they placed in an isolated spot in the universe they would last for ever; for what is lifeless cannot die — it is only destroyed by the outside world. On the other hand organic bodies destroy themselves: they are not only subject to constant change, but their whole development is a progress towards death — (Baer, apud Thein, *Christian Anthropology*, p. 50).

[1] A chemical «living substance» does not exist — (Driesch, *op. cit.*, v. ii., p. 249).

[2] The only reasonable account that we can give of the phenomena of life is this: There is an internal principle which, in a living substance, renders the atoms, with their chemical and physical forces, capable of accomplishing something essentially higher than they can accomplish in inorganic nature — (Wasmann, *op. cit.*, p. 217).

In a living organism there is a specific influence at work, which so controls all the movements of the body and of the material entering or leaving it, that the structure peculiar to the organism is developed and maintained — (Haldane, «*Nineteenth Century*», 1897, p. 400, apud *Windle, op. cit.*, p. 11).

If the organism were only the product of natural forces, then

Gratis et contra principia scientiarum experimentalium affirmant nonnulli materialistæ fore, ut chimia per aliquem processum adhuc incognitum producere queat veros organismos. Alii vero iique peritissimi fatentur vires materiæ esse prorsus impares ad ullum organismum producendum.[1]

by a suitable combination of these, it must be possible to form a living body. But with all our progress in natural science, no one has ever seriously thought that a living body could be produced from the crucible, nor a plant, nor even the lowest moss. The chemical constituents of the animal body are well known, and their proportions and affinities can be expressed in arithmetical formulas, but no scientist has ever yet succeeded in producing an organism — (**Hettinger**, *Nat. Religion,* p. 216).

We know exactly of what elements the egg-contents are composed, how much oxygen, how much hydrogen, how much nitrogen. We can blend them in those proportions accurately for ourselves; yet cannot all the powers of science make an egg that shall hatch so much as a tadpole. It is evident that there is a something present which the scientists that deals with the matter cannot detect, and this something is the real cause of the developments ensuing, and determines them in the definite directions they assume — (**Gerard**, *Science or Romance?* p. 107).

[1] « We are doubtless able », says Liebig, « to adapt, alter, intensify, and neutralize the cohesive forces in the atoms of organic combinations. We can, by the combination of two, three, or four organic atoms, create molecules of a higher order, or we can resolve such combinations back into their constituent atoms. But we cannot, from its constituent elements, produce even one of these organic combinations. No laboratory will ever create a cell, a muscle, a nerve; in a word, any truly living particle of an organism » — (**Hettinger**, *loc. cit.).*

Here is what the leading English chemist of our day, Sir H. Roscoe, has to say of Huxley's chemistry of protoplasm: — « It is true that there are those who profess to foresee that the day will arrive when the chemist, by a succession of constructive efforts, may pass beyond albumen, and gather the elements of lifeless matter into a living structure. Whatever may be said of this from other standpoints, the chemist can only say that at present no such problem lies within his province. Protoplasm, with which the simplest manifestations of life are associated, is not a compound but a structure built up of compounds. The chemist may successfully synthesize any of its component compounds, but he has no more reason to look forward to the synthetic production of the structure than to imagine that the synthesis of gallic acid leads to the artificial production of gall-nuts » — (**Gaynor**, *The New Materialism*, p. 78).

Prof. Wilson, perhaps the most eminent exponent living of the

174. Cor. 2. Ergo primum principium vitale est etiam *forma substantialis* corporis viventis. Etenim omne corpus, ut jam ostensum est *(Th. XVI.)*, constat materia prima, quæ est omnium corporum commune principium, et forma substantiali, quæ determinationem specificam materiæ impertit, ac ultimum principium operationum et proprietatum, quæ tali composito sunt propriæ, evadit. Ex thesi autem sequitur viventibus inesse principium, unde dimanant vitales operationes et specificæ proprietates; hoc ergo principium debet esse illud, quod cum materia prima corpus *vivens* constituit, *i.e.*, primum principium vitæ est etiam corporis viventis forma substantialis.

Quum vero fieri nequeat, ut idem corpus duas determinationes specificas simul habeat, dicendum est unicuique viventi corporeo unam duntaxat inesse formam substantialem. Unde, unumquodque vivens sicut est unum ens, ita est unum vivens.[1] Præterea, omnes partes viventis ad *unum* finem conspirant, qui est organismi perfectio et reproductio. Jamvero, ubi plura in unum finem cooperantur, ibi debet esse unum principium colligans et dirigens, seu, in unoquoque vivente una tantum est anima, et pro-

problems of cell-life, tells us that « the study of the cell has on the whole seemed to widen rather than to narrow the enormous gap that separates even the lowest forms of life from the inorganic world » — **(Windle, *What is Life?* p. 11).**

It was boasted long ago that our laboratories would ere long produce living substances, but they have not done it. *Omnis cellula a cellula* is still true till we get back to the first cell of all — **(Dwight, *Thoughts of a Catholic Anatomism,* p, 130).**

[1] In each animal or plant there is only one vital principle — one substantial form. . . Were there more than one vital principle, then we should not have one being but a collection of beings. The practice of abstraction in scientific description and discussions of the structure and functions of the cell has sometimes occasioned exaggerated notions as to the independence and separateness of existence of the individual cells, in the organism. It is true that certain definite activities and functions are exercised by the individual cell as by the eye or the liver; and we may for convenience consider these in isolation: but in concrete reality the cell, as well as the eye or the liver, exerts its activity by and through the living energy of the whole being — **(Maher, *Cath. Encycl.*, v. ix., p. 243).**

inde falluntur ii naturalistæ, qui arbitrantur in viventibus singulas cellulas suo proprio principio pollere, ita ut completus organismus sit societas seu colonia viventium (cf. *Urráburu,* Psych., v. i., p. 221).[1]

§ 2. De Natura Primi Principii Vitæ.

175. Definitio. Primum principium, quo corpus constituitur vivens, dicitur *anima,* quæ a scholasticis definitur: *actus primus corporis physici, organici, vitam in potentia habentis.*

Dicitur 1°. *actus,* quia anima explet potentialitatem, quam materia habet respectu diversarum corporum specierum; actus enim, qui, *absolute* sumptus, dicitur perfectio vel determinatio, *respective* consideratus, est determinatio respondens alicujus rei potentiæ ejusque capacitatem complens.

Dicitur 2°. *actus* **primus** (i.e., actus quo res constituitur in primo suo *esse),* quia anima est principium, quo corpus vivens *est,* et est *vivens;* anima igitur est forma substantialis corporis viventis. Porro, sicut forma substantialis in genere est primum principium activitatis, ita hæc forma est primum principium hujus activitatis *(scil.,* vitalis). Præterea, anima est actus *primus,* quatenus est fons et radix omnium corporis viventis activitatum, quæ ideo actus *secundi* vocantur *(Ont., n.* 321, 4°).

Dicitur 3°. *corporis,* quia nec nomen nec rationem animæ habet actus primus *(v.g.,* angelica substantia), qui nullum ordinem habet ad substantialem unionem cum materia.

Dicitur 4°. *corporis* **physici,** quia corpus, ad quod actuandum anima ordinatur, non est corpus *artificiale,* quod,

[1] As every organism is composed of cells and every cell performs vital functions, there is the inclination to look upon every cell as a separate organism and to say, as some have actually said, that the larger organism is a mere collection or «colony» of independent cells. Such a conception, however, is radically false: the living being has always two distinctive features that clearly evince its *substantial unity,* namely, the *co-ordination of its organs,* and the *subordination of its functions* — (**Mercier,** *Manual.,* v. i., p. 174).

ut tale, non admittit nisi accidentale et secundarium principium operationum, sed est corpus *naturale,* quod ex se agere potest.

Obs. — Corpus physicum, quod anima actuat, censent *scotistæ* esse corpus constitutum jam in suo *esse* corporis per aliam formam (quam *corporeitatis* vocant) ab anima distinctam[1]. Alii cum S. *Thoma* negant dari in viventibus aliam formam præter animam: docent nihilominus «corpus» in definitione allata non esse accipiendum pro nuda materia prima, sed pro materia prima jam in suo *esse* corporis constituta per animam, quatenus hæc munere formæ substantialis simpliciter fungitur: corpus autem sic constitutum concipi potest tamquam subjectum respectu ejusdem animæ, prout hæc est principium vitæ. Unde, licet anima sit forma, qua corpus constituitur *corpus* et corpus *vivens*, tamen per animam, prout est forma substantialis, materia prima constituitur *corpus,* quod corpus per animam, prout est principium vitale, constituitur *vivens;* et licet simul constituatur corpus et vivens, prius tamen ratione constituitur corpus quam vivens (cf. *Urráburu,* Psych., v. i., p. 140).[2]

Dicitur 5°. *organici,* quia corpus, quod anima informat, non est quodcumque corpus naturale, sed illud, cujus partes varie disponuntur ad deserviendum variis animæ operationibus; id enim significat corpus *organicum*.

Dicitur 6°. *vitam* in potentia *habentis,* quia corpus ex

[1] Sic breviter, relate ad corpus humanum, sententiam suæ scholæ proponit **Van de Woestyne**: «Doctor Subtilis ex doctrina Alex. Halensis, S. Bonaventuræ, Pecham, etc. plures in composito humano adstruit formas substantiales, ita quod *(a)* corpus (humanum) non sit materia prima, sed entitas ex materia et forma substantiali *corporea* composita, quæ ad informantem animam intellectivam se habet ut potentia-materia, *(b)* anima intellectiva elevet, perficiat, informet id quod in composito-homine vocatur corpus, non quidem ad esse corporis, sed *ad esse corporis humani, (c)* forma inferior corporea ordinetur ad formam superiorem intellectivam»—*(Psych.*, p. 608).

[2] Juvat adjicere doctrinam **S. Thomæ** hac de re: «Cum forma perfectissima det omnia, quæ dant formæ imperfectiores, et adhuc amplius: materia prima prout ab ea perficitur eo modo perfectionis, quo perficitur a formis imperfectioribus, consideratur ut materia propria, etiam illiusmodi perfectionis, quam addit perfectior forma super illas; ita tamen quod non intelligatur hæc distinctio in formis secundum essentiam, sed solum secundum intelligibilem rationem. Sic ergo *ipsa materia secundum quod intelligitur ut perfecta in esse corporeo susceptivo vitæ, est proprium subjectum animæ*» — (Q. *Disp.* III., a. 3, ad 2; *cf.* I. q. 76, a. 4).

sua intrinseca unione cum anima aptum evadit ad exercendas operationes vitales ordinis vegetativi et sensitivi, et ad operationes ordinis intellectivi extrinsece concurrendum.[1]

Obs. — Prædicta definitio est *metaphysica*. Quatenus enim anima est actus primus corporis physici, convenit cum ceteris formis substantialibus, et *genus proximum* habetur; quatenus est actus corporis organici potentia vitam habentis, a ceteris formis differt, et exprimitur *differentia specifica*.

176. Consectaria. Unde 1°. ad conceptum animæ duo requiruntur: *(a)* ut ipsa sit primum principium vitæ corporis; *(b)* ut simul cum corpore sit elementum constitutivum viventis. Quum vero natura corporea a spiritibus excludatur, ratio animæ haud convenit principio, quo ipsi vivunt. Ex quo sequitur non æque patere *animam* et *principium* vitæ, *animatum* et *vivens;* id quod *S. Thomas* sic indicavit: « anima est primum principium vitæ in his, quæ *apud nos* vivunt » (1, q. 75, a. 1).

2°. Anima nequit esse quid accidentale, sed necessario est entitas substantialis; principium enim, quod constituit corpus vivens, illudque specifice secernit a non vivente, accidens esse nequit, quum accidens speciem non constituat, sed eam jam constitutam præsupponat. Præterea, nulli accidenti competere potest esse *primum* principium

[1] « Cum operatio vitalis cedat in bonum ipsius viventis, corpus organicum dicitur *potentia vitam habens*, quia *aptum est operationibus vitalibus exercendis*, cujusmodi sunt, *e.g.*, nutritio et generatio. Nec refert, quod diversitas organorum permanere videatur in corporibus vegetalibus et animalibus, tametsi vita destituuntur. Permanent quippe *reliquiæ* nonnullæ organismi, sed verus organismus non permanet, idcirco nempe quod propriam organismi operationem nullam habeant. Quare, Aristoteles ait oculum et carnem non dici in mortuo nisi æquivoce. Ex quo patet duas particulas illas, quibus corpus vocatur et *organicum* et *potentia vitam habens*, non rem diversam, sed eamdem sub diverso respectu exprimere. Cum enim corpus dicitur *organicum*, consideratur ipsa conformatio et mutuus ordo membrorum, quibus instruitur, ut sit subjectum proxime idoneum ad vitaliter operandum: cum vero additur *potentia vitam habens*, hæc ipsa operatio quæ est totius organismi *finis* expressius et disertius exprimitur » — (**Schiffini, *Cosm.*, p. 134**).

vitæ, quia accidens, tum ut existat, tum ut operetur, exigit subjectum, a quo dependeat.

3°. « Anima non est corpus. . . Manifestum est enim, quod esse principium vitæ vel vivens non convenit corpori ex hoc quod est corpus ; alioquin omne corpus esset vivens aut principium vitæ. Convenit igitur alicui corpori quod sit vivens, vel etiam principium vitæ *(i.e.,* principium *quod* vitæ), per hoc quod est tale corpus. Quod autem est actu tale, habet hoc ab aliquo principio, quod dicitur actus ejus. Anima igitur, quæ est primum principium vitæ, non est corpus sed corporis actus ; sicut calor, qui est principium calefactionis, non est corpus, sed quidam corporis actus » (**S. Th.**, 1, q. 75, a. 1).

Dices : Anima vegetativa et sensitiva communiter dicuntur materiales et corporeæ ; *ergo*.

Resp. Etsi corpus et res corporea idem sæpe significant, est tamen inter ea aliqua distinctio; « corpus » enim significat id, quod habet essentiam ex materia et forma compositam ; « res corporea » vel « materialis » dicit id, quod pertinet ad corpus vel pendet a materia. Jam, animæ inferiores pertinent ad corpus ut formæ substantiales, quæ a materia tum in esse tum in agere dependent.[1]

4°. Quum anima sit principium vitæ, quemadmodum tres distinguuntur species vitæ, ita tres existunt species animæ, *scil.*, anima *vegetativa, sensitiva, intellectiva*. Quæ divisio non fit per membra mutuo exclusiva,—quasi anima sensitiva non esset simul vegetativa, et anima intellectiva non esset simul sensitiva et vegetativa, — sed fit per distinctivam notam cujusque animæ.

177. **De animæ divisibilitate.** Agitur de anima vegetativa et sensitiva ; omnes enim agnoscunt animam huma-

[1] The souls of animals (et plantarum) were spoken of by the scholastics indifferently as *material* and *corporeal*. They did not, however, intend by these terms to imply that the principle of vital activities is a bodily substance of three dimensions. They simply meant to teach that it depends absolutely on the material subject which it actuates, just as the heat depends on the matter of the burning coal and the stamped inscription on the wax — (**Maher**, ***Psych.***, p. 593).

nam, utpote spiritualem, esse prorsus indivisibilem. Jam, duplici modo aliquod ens dici potest divisibile: *(a)* in partes constitutivas (scil., *materiam et formam),* et hoc modo solum corpora sunt divisibilia; *(b)* in partes integrantes seu quantitativas, *i.e.*, partes, quarum una est extra aliam. Porro, res dividi potest in partes integrantes aut *ratione sui* seu *per se,* aut *ratione compositi* seu *per accidens.*

Quod attinet igitur ad divisibilitatem animarum inferiorum, tres sententiæ obtinent apud philosophos. Alii negant animis competere partes integrantes et proinde eas esse divisibiles. Quodsi plantæ et animalia post decisionem vivant, id explicandum putant per eductionem novæ animæ in parte decisa (cf. *Harper,* v. ii. pp. 649-55, *Hugon,* Biol. et Psych., pp, 64 sqq.).

Alii censent animas plantarum et brutorum imperfectorum (quorum, *scil.*, organismi sunt parum complexi, ut lumbrici) dividi cum divisione organismi; animas vero brutorum perfectiorum esse penitus indivisibiles. Ita plures cum *S. Thoma.* (Qu. Disp. iii., a. 10, ad 15.).

Suarez et non pauci alii, quos inter *Van der Aa* (Organologia, p. 224), *Mendive* (Cosm., p. 297), *Haan* (Cosm., pp. 133 et 168), *Pesch* (Psych., v. i., p. 445), *Nys* (Cosm.), defendunt divisionem omnium animarum inferiorum, cum hac tamen differentia, quod bruta perfectiora, secus ac imperfecta, facta notabili divisione, intereunt.

178. Agevero, defensores primæ opinionis nullam afferunt sufficientem rationem, cur partes plantæ vel animalis post abscissionem vivere perdurent; nam pars abscissa, si non retinet animam, se habet ut materia mortua; nec valet dicere in hac parte novam animam educi e potentia materiæ; nam imprimis a privatione perfectionis ad ejus possessionem non datur regressus. Deinde, eductionis non alia causa præter mechanicam sectionis operationem assignari potest; hæc autem non terminatur ad eductionem novæ animæ.

De secunda et tertia sententia hæc observa: Anima vegetativa et belluina, quum in essendo dependeant a

materia, naturam materiæ sequuntur, ejusque imperfectionem quodammodo participant; quando igitur organismus dividitur, eo ipso et *per accidens* dividitur anima (saltem imperfecta), quemadmodum dividitur forma vel quævis qualitas auri per ipsius auri divisionem.[1]

Siquidem vero in viventibus inferioribus fere nulla occurrit partium varietas, anima eodem fere modo informat partes et totum, et proinde, si organismus ita secatur, ut organisatio partium integra servetur, partes separatæ aptæ manent ad operationes vitales exercendas; unde peracta divisione vitam non amittunt.

E contra, bruta perfectiora, eo quod ad vivendum organismum valde complexum requirunt, non ita dividi possunt, ut utraque pars vivere perduret, sive anima simul cum corpore dividatur sive non.[2]

[1] Faut-il, avec l'illustre penseur du moyen âge, restreindre la divisibilité des formes aux rangs inférieurs du règne animal, attribuer sans réserve, comme l'ont fait plusieurs scolastiques d'époque plus récente, un caractère de simplicité aux formes plus élevées? Tel n'est pas notre avis.

En somme, quelle est la raison foncière de la divisibilité des formes corporelles? Leur dépendance intrinsèque à l'égard de la matière. Parce que rivés à ce substrat et astreints à y prendre leur point d'appui, sous peine de déchoir de l'existence, les principes déterminants participent de toute nécessité aux imperfections naturelles des corps; ils sont avec la matière le sujet immédiat de l'étendue, car le mode de présence dans l'espace est toujours fonction du mode d'existence. Quelle que soit donc leur perfection relative, ils constituent par leur union avec leurs bases matérielles, un tout quantitatif dont la divisibilité devient une propriété essentielle. Or cette dépendance fondamentale, d'où dérive en dernière analyse la possibilité du fractionnement, n'entache-t-elle pas aussi le principe de vie des animaux supérieurs? Sans aucun doute. Pour eux, comme aux degrés les plus infimes du règne animal, l'adhésion à la matière est une condition essentielle d'existence. Il faut par conséquent en conclure que, malgré leur supériorité incontestable, ils restent, au même titre que les autres, susceptibles de division — (**Nys**, *Cosm.*, v. ii., p. 44, éd. 3ième).

[2] Non juvat circa controversiam hac de re immorari. « Hinc inde (inquit **Urráburu**, *Psych.*, v. i., p. 297) haud leves militant rationes, externa vero probabilitas utrinque maxima est; nam simplicitatem tuentur fere omnes Thomistæ, duce Aquinate; at pro divisibilitate pugnant Scotistæ, ac fere omnes Nostrates, quibus prævivere aliquot nobilissimi Thomistæ, ac nominatim Capreolus, Soncinas, Javellus, Martinez ». Deinde, argumentis utriusque partis perpen-

§ 3. De Proximo Vitæ Principio seu De potentiis vitalibus.

179. Notio potentiæ vitalis. Anima est primum principium vitæ; ut vero suas operationes exserat, instrui debet quibusdam proprietatibus, quæ potentiæ seu facultates vocantur. *Potentia* igitur universim est *proprietas, qua ens est capax effectum producendi,* vel etiam: *principium proximum operationum.* Dicitur etiam *facultas,* quia ex ea est *facilitas* agendi.[1] Potentia *vitalis* est illa, qua agens potest immanenter operari seu seipsum perficere. Potentiæ vitales sunt duplicis generis: *organicæ* et *inorganicæ.* Potentiæ *organicæ* sunt illæ, quæ in composito animato existunt, quarum igitur activitates sine organo exerceri nequeunt, *v.g.,* sensus. Potentiæ *inorganicæ* dicuntur illæ, quæ non in composito, sed in anima sola existunt, et proinde earum activitates sine interno organi concursu exercentur, *scil.,* intellectus et voluntas. Unde, potentiæ

sis, sic concludit (p. 313): «Si quis meum judicium exquirat, utramque opinionem arbitror probabilem, et intrinsece et extrinsece; forte tamen intrinsece probabilior est secunda, quæ tenet omnes animas etiam brutorum perfectiorum divisibiles esse; habet enim quasdam rationes efficaces, quæ non parum negotii facessunt. . . Ceterum quamvis animæ brutorum perfectiorum sint absolute divisibiles, utpote partibus integrantibus constantes, et propterea informent materiam extenso modo, nec sint totæ in singulis partibus ejus; possunt nihilominus dici minus proprie indivisibiles, quatenus nempe non sunt ita divisibiles, ut partes, quibus revera constant, possint naturaliter invicem separari, et separatæ vivere».

[1] The powers of action are what in cosmology we call *forces,* and in psychology *faculties.* They are the *immediate* principles of action in a being, the *remote* and fundamental principle being its nature. . . Thus, we accept various species of mechanical, physical, and chemical forces, and, again various species of both sense and rational faculties.

There is another very significant difference between forces and faculties — *the capacity for development;* it is present in faculties, absent in forces. *Forces* never change, they are rigid, *faculties* are capable of improvement, they are *plastic.* . . Sense faculties, on account of the great complexity of the sense organs are of little plasticity, whereas the plasticity of rational faculties is indefinite — (**Baschab,** *Manual of Modern Schol. Phil.,* p. 364).

organicæ, licet radicentur in anima, insunt composito tamquam subjecto; potentiæ inorganicæ animæ soli ut subjecto insunt.

180. Potentia activa et passiva. Quamvis omnes potentiæ vitales, eo præcise quod sunt principia operationum, sint activæ, tamen pro diverso modo, quo se habent respectu sui objecti, aliæ dicuntur *activæ,* aliæ vero *passivæ*. Jamvero, potentia *activa* est illa, quæ, ut agat, non indiget determinatione ab objecto, sed se determinat ad objectum mutandum. Cujusmodi sunt facultates vegetativæ. Potentia *passiva* est illa, quæ influxu sui objecti ad agendum movetur, ut accidit, *v.g.,* in sensibus.[1] Unde, potentia activa respicit suum objectum tamquam finem attingendum, potentia autem passiva illud respicit tamquam causam vel principium movens.

181. Potentiarum Specificatio. Principium specificativum alicujus rei intelligitur illa realitas externa, ad quam illa res habet sua natura aliquam proportionem et commensurationem, ita ut per ordinem ad talem realitatem perfectio rei declarari possit. Non est igitur aliquid rei ipsi intrinsecum, sicut principium constitutivum, sed est signum, quo rei natura dignosci potest; eis autem rebus attribui solet, quæ totæ quantæ sunt ad aliud ordinantur, ut sunt scientiæ, artes, facultates, actus.

Jam, *potentiæ vitales specificantur a suis actibus et objectis*

[1] A passive faculty is not a ***non-acting*** faculty, but a faculty which is ***passive*** before being operative, a faculty which must be «informed» by something other than itself before exercising an activity: as opposed to the ***active*** power, which has no need of any such foreign influence, but passes to the act as soon as the ***conditions*** required for the purpose are verified — (**De Wulf-Coffey**, *Hist. of Medieval Phil.,* p. 335).

«*Omnes potentiæ vegetabilis animæ sunt activæ,* quia alimentum transmutatur per potentiam animæ tam in nutriendo quam in generando: sed *potentiæ sensitivæ omnes sunt passivæ,* quia per sensibilia objecta moventur et fiunt in actu. Circa intellectum vero aliqua potentia est activa, aliqua passiva, eo quod per intellectum intelligibile in potentia fit intelligibile actu, quod est intellectus agentis; et sic *intellectus agens est potentia activa*. Ipsum etiam intelligibile in actu facit intellectum in potentia esse intellectum in actu; et sic *intellectus possibilis erit passiva*» — (**S. Th., 2. *Disp.* I., q. 16, a. 1, ad 13**).

formalibus, tamen immediate ab actibus, mediate ab objectis; actus enim est internus finis potentiæ, objectum vero est finis externus.

Probatur. Res quælibet tales debet sortiri naturam, qualem postulat finis, in quem naturaliter ordinatur; *atqui* potentiæ vitales naturaliter ordinantur ad operationem et quidem circa determinatam speciem objecti; ergo potentiis vitalibus talis competit natura, qualem postulant earum actus et objecta formalia, et proinde ex actibus et objectis, optime cognosci potest essentialis differentia vitalium potentiarum.

Præterea, quum modus operandi sequatur modum essendi, ubi manifestantur actus specifice distincti, ibi (sicut ab effectu ad causam proportionatam) concludendum est ad potentias specifice distinctas. Sed et ipsi actus debent ad sua objecta proportionem habere; et sane actus potentiæ activæ suum objectum respiciunt ut finem; finis autem est norma ad cognoscenda ea, quæ sunt ad finem (n. 135). Actus potentiæ passivæ se habent respectu sui objecti ut effectus respectu causæ necessario determinantis; et proinde ex ejusdem natura et perfectione mensurantur natura et perfectio actuum, ad quos provocant, et potentiarum, quibus hi actus eliciuntur.[1]

182. Ex dictis colliges tot esse species potentiarum vitalium, quot sint operationes vitales formaliter diversæ. Hæc autem sex enumerantur; unde, sex quoque sunt potentiæ vitales, quæ sunt: *potentia vegetativa, potentia cognoscitiva inferior* (sensus), *potentia cognoscitiva superior* (intellectus), *appetitus sensitivus, appetitus intellectivus* (voluntas), *vis locomotiva*. Et quidem, *potentia vegetativa* versatur circa corpus animatum, quod ipsa suis functionibus nutrit, auget, reproducit.

Ope conscientiæ deprehendimus in nobis duo genera operationum; quandoque enim in anima nostra recipimus objectum, non physice, sed secundum aliquam objecti si-

[1] « Objectum, licet sit extrinsecum, est tamen principium vel finis actionis. Principio autem et fini proportionantur ea, quæ sunt intrinseca rei » — (**S. Th.**, I, q. 77, a. 1, ad 1).

militudinem; quandoque affectu ferimur in objectum ut in se est (vel ab ipso aufugimus). Prior est operatio *cognoscitiva,* altera vero *appetitiva.*

Atvero, operatio cognoscitiva, et similiter appetitiva, exerceri potest per organum vel absque organo; et proinde necesse est admittere potentiam, quæ ope organi cognoscit *(sensum),* et potentiam, quæ absque organo cognoscit *(intellectum).*

Duplici cognitioni respondet duplex appetitio specie diversa, et proinde duplex potentia appetitiva: *appetitus sensitivus* et *voluntas.*

Denique, ad assequendum (vel vitandum) quod cognoscitur et appetitur, ordinatur operatio, qua cognoscens a loco in locum se sponte transfert, cujus potentia est *vis locomotiva*. .

183. **Potentias ab anima esse realiter distinctas** sequitur ut corollarium ex mutua earum distinctione specifica; si enim identificarentur cum anima, non possent esse ab invicem distinctæ.

Præterea, anima per se ac directe ordinatur ad informandum seu ad esse substantiale corporis constituendum; potentia autem per se ac directe ad operandum ordinatur; *atqui* quum impossibile sit, ut res simul, per se ac directe, ad diversa ordinetur, dicendum est potentias animæ ab ipsa anima esse realiter distinctas.[1]

[1] In every created substance there are two potentialities and two acts. There is the primary potentiality *to be*, or *of being;* and correlatively, the primary act *of being*. This is called its *first* act. The act is the form; in bodies, the potentiality would be primordial matter. The two constitute the specific substance. . . But there is another act of subtance, consequent on its essential constitution; for each one has its own determined, its own specific operation. And the reason why this operation must be consequent upon the complete constitution of the essence, is this: a thing must *be*, before it can *act* or have the *power of acting*. This act is called the *second* act of substance; for as much as it follows after the first. It, too, postulates as its correlative a potentiality, or power, of operation. Now, it is on this second act and second potentiality that the present question turns. Are the two identical with the first act and the first potentiality? St. Thomas repeatedly demonstrates that they are not. Only in one Being are the two identical. . . But in

Fatendum est auctores, qui realem distinctionem potentiarum ab anima defendunt, generatim non ut certam, sed ut valde probabilem, eam existimare; « non quod rationes vere probabiles pro adversa sententia adduci possint, sed quod res obscurior sit, quam quæ disceptari cum certitudine possit » (**Pesch.**, *Phil. Nat.*, v. ii., p. 67). Triplex revera viguit et adhuc viget sententia. Quidam enim non agnoscunt nisi distinctionem rationis. Juxta scotistas distinctio est *formalis (Ont.*, n. 290), *i.e.*, facultates « non sunt res aliæ, sed idem sunt ac anima identice et unitive » (**Van de Woestyne**, v. ii, p. 271). Gravissimi autem doctores antiqui et recentes realem distinctionem ut satis certam tuentur, cf. *Urráburu* (Psych., v. i., p. 162), *Lahousse* (Psych., p. 21), *Boedder* (Psych., p. 354), *Coffey (Ont.*, pp. 298-304).

184. **Resultantia potentiarum.** Omnes, qui admittunt realem distinctionem inter animam et suas potentias, has ab anima dimanare docent; controvertitur autem quomodo potentiæ ab anima procedant, nimirum, an per *veram actionem* animæ, an per *naturalem resultantiam*, quatenus nempe eadem actio, qua anima producitur, continuatur ad productionem potentiarum, juxta illud: « qui dat formam, dat consequentia ad formam ».

Hæc altera sententia præferenda est; nam si potentiæ *efficienter* defluunt ab anima, activitas eas producens exercetur vel ipsa essentia animæ vel potentia ab anima realiter distincta; in primo casu anima esset immediate activa; in altera autem redit quæstio, quomodo talis potentia ab anima procedat. Dicendum igitur est potentias produ-

all finite entity being and operation are really distinct. The one is a substantial, the other an accidental act. Hence the first act or the substantial form is, so to say, exhausted in the actuation of specific being. In like manner, the substantial potentiality is fulfilled by the actuation of its substantial form. Thus perfected essentially, substance can admit of no further potentiality. Neither is it capable of any additional substantial act. It remains, therefore, that the second potentiality and the second act should be accidental — extraneous, that is, to the already constituted essence — (**Harper**, v. ii., p. 326).

ci, quatenus, posita anima, ponuntur potentiæ ut ejus naturale complementum. « Emanatio propriorum accidentium a subjecto non est per aliquam transmutationem, sed per aliquam *naturalem resultationem,* sicut ex uno aliud naturaliter resultat, ut ex luce color » (S. Th., 1, q. 77, a. 6, ad 3). Prior sententia videri potest apud *Suarez* (Meta., Dist. 18, s. 3), *Urráburu (Ont.,* p. 923).

CAPUT SECUNDUM.

De Vita Vegetativa.

185. Inter tres species vitæ, quæ in entibus corporeis reperiuntur, infima est vegetativa; et quum bruta et homines, non secus ac plantæ, potentiis et functionibus vitæ vegetativæ propriis vere instruantur, est et communissima. Quocirca primo in hoc capite oportet agere de vita vegetativa generatim, prout competit omnibus viventibus corporeis, deinde de principio vitæ inferioris et de modo, quo viventia inferiora propagentur.

ART. I.

DE VITA VEGETATIVA GENERATIM.

§ 1. De operationibus et potentiis vegetativis.

186. Tres sunt operationes principales vitæ vegetativæ, scil., *nutritio, auctio, generatio.* Dicuntur *principales,* quia non tamquam medium ad alias operationes ordinantur, sed per se finem sibi proprium et ab aliis finibus distinctum vindicant. Completus enim ac remotus finis, in quem tendunt omnes operationes vitæ vegetativæ, est evolutio corporis viventis ad debitam magnitudinem et perfectionem, ac ejusdem propagationem; hic autem finis tribus recensitis operationibus obtinetur. Porro, unaquæque habet suum finem proximum et independentem; etsi enim nutritio auctioni prærequiritur, et similiter, nutritio

et auctio sunt conditiones generationis, non ideo tamen carent fine proprio; nam nutritio perdurat postquam vegetans debitam molis perfectionem adeptum est; ac nutritio et auctio postquam generatio desiit.

Huic triplici operationi respondet triplex facultas seu vis, scil., vis *nutritiva, augmentativa, generativa,* quæ igitur constituunt potentias vegetalium proprias.

187. **Nutritio.** Nutritio est *operatio, qua substantia organica alimentum in suam substantiam convertit, ad seipsam in esse conservandam.*

Dicitur 1°. *in suam substantiam convertit,* ut hæc operatio distinguatur *(a)* ab auctione et generatione, et *(b)* a combinationibus chimicis, ex quibus resultat tertium corpus a componentibus specifice diversum; in nutritione vero substantia, quæ nutritur, suam naturam non amittit, sed substantiam inanimatam sibi assimilat.

Dicitur 2°. *ad seipsam conservandam,* ut *finis* nutritionis indicetur; in viventibus enim quædam perpetua elementorum mutatio peragitur, qua, deperditis aliis partibus, aliæ novæ per vim nutritivam elaboratæ succedunt, et jacturam reparant.[1] Qui duplex processus perditionis et reparationis physiologi vocant *materiæ circulationem, vorticem vitalem, metabolismum.*[2]

[1] The traditional ***seven years*** for the complete renewal of the entire body *(hominis)* are considered by modern physiologist to be far from correct. The change is more rapid — (**Gruender**, *Psychology without a Soul,* p. 123).

[2] In every moment of their lives plants, animals, and even man himself, lose a portion of their substance. In order to preserve life these constant losses must be incessantly repaired; and hence it results that the beings included in the two kingdoms must be supplied with food. Animals and plants, then, borrow from the external world certain materials, which, when properly elaborated, fill up the gap that is being constantly made. . . Here a very important problem presents itself, which it is difficult enough to solve. Does the *vital stream* hold the entire organism under its control, or are there certain portions beyond its sphere of government? This latter hypothesis has been, and is still, perhaps, that of some physiologists. . . The experiments of Duhamel, so ingeniously begun and carried out by Flourens, and the works of Chossat, leave no room for doubt on this point. The latter, among others, fed poultry and pigeons upon food from which he had removed the calcareous salts

Nutritioni deserviunt plures aliæ operationes, quæ in plantis sunt:—*(a) Absorptio,* qua vegetans maxima per radices et folia surripit ex humo et aere substantias alimentarias.[1]

—*(b) Circulatio,* qua alimenta elaborata seu digesta per meatus internos ad ultimas partes vegetantis transvehuntur (cf. *Bentley,* Manual of botany, p. 779).

—*(c) Transpiratio,* qua per poros exhalatur seu emittitur aqua, quæ cum elementis nutritivis absorpta in vaporem convertitur (cf. *Bentley,* ib., p. 730).

— *(d) Respiratio,* qua planta alternatim surripit et refundit quædam aeris elementa. Duplex est: alia *nocturna,* qua planta nocte surripit oxygenium et refundit acidum carbonicum, modo animalium; alia *diurna,* qua planta sub influxu luminis absorbet acidum carbonicum, quo

only. Thus he supplied these birds with the materials necessary for the nutrition of their tissues, minus the inorganic substances, which, arranged in a living woof, give solidity to the bones. At the end of a certain period fowls and pigeons became lame and died. Then the skeleton was found altered, and the bones attenuated or even perforated. The rest of the organism had been nourished; the bony tissue alone had not repaired its losses, and these were betrayed by serious injuries. The bones themselves, organs perhaps the least vital of all, and which the physiologists whose opinions we oppose have almost compared with brute matter, are, like the most delicate structures in the body, although to a less extent, under the control of the vital vortex.

We see that in the most hidden depths of living beings two contrary currents flow: one, molecule by molecule, constantly removing something from the organism; the other as rapidly repairing the breaches which, too much widened, would bring death. At the end of a given period the total or almost total renewal of the substance of the body must follow from the double action. — (Quatrefages-Lawson. *Metamorphoses of Man and the Lower Animals,* p. 2).

[1] The organ by means of which the nutrient substances are taken up is, in the lower plants, the entire surface; in the higher plants this function is especially assigned to the root which is constructed for this purpose. . . Only the youngest parts with their delicate root-hairs and papillæ can perform this function. . . In addition to the roots, the higher plants possess also in the leaves organs which are adapted for the absorption of nutrient substances in a gaseous condition— (Thomé-Bennett. *Structural and Physiological Botany,* p. 162).

decomposito, refundit oxygenium. Hæc, eo quod peragitur partibus chlorophylla repletis, respiratio *chlorophyllica* appellatur.[1]

—*(e) Secretio,* qua ex ipsa substantia viventis corporei solvuntur quædam elementa liquida ad alias operationes organicas peragendas necessaria *(v.g.,* saliva et succus digestorius in animalibus); et *excretio,* qua ex organismo solvuntur et extra ejiciuntur elementa noxia vel inutilia, ut resina in plantis.

—*(f) Assimilatio,* qua singulæ partes vegetantis in se convertunt et viva faciunt elementa nutritiva sibi propria. Animalia substantias organicas digestione præparatas assimilant. In hac operatione formaliter consistit nutritio, quum per illam solam nova producatur pars substantiæ viventis.

[1] The absorption and exhalation of carbonic acid and oxygen gases by the leaves vary according to circumstances. Thus, when the green leaves of a healthy plant are exposed to sunlight, all experiments show that carbonic acid gas is absorbed from the atmosphere and decomposed, leaving its carbon, which is the result of the decomposition, behind, and evolving its oxygen. . . While the absorption of carbonic acid and evolution of oxygen are thus taking place by day, it is supposed by most observers that in the absence of light, a contrary action occurs — oxygen being then absorbed, and carbonic acid exhaled. At the same time all who hold this opinion admit that the amount of oxygen gas thus absorbed by night is very much less than that given off by day. . . This evolution of oxygen gas by day has a most important influence in nature. This will be at once evident when it is remembered that it is the only known process by which oxygen gas,—so essential to our existence, and which is constantly being removed from the atmosphere we breathe, by the respiration of man and other animals, by the process of combustion, by oxidation of mineral matter, and by other processes that are constantly going on upon the globe,—is restored to it in a free condition. Thus we see that the two great organized kingdoms of nature are made to co-operate in the execution of the same design, each ministering to the other, and preserving that due balance in the constitution of the atmosphere which adapts it to the welfare and activity of every order of beings, and which would soon be destroyed were the operations of either of them to be suspended. It is impossible to contemplate so special an adjustment of opposite effects without admiring this beautiful dispensation of Providence, extending over so vast a scale of being, and demonstrating the unity of plan upon which the whole system of organized creation has been devised — (**Bentley**, *op. cit.,* pp. 733-735).

188. Auctio. *Auctio* est *operatio, per quam substantia organica, alimenta assimilando, debitam sibi quantitatem acquirit.*

Dicitur 1°. *alimenta assimilando,* quia auctio viventis, in eo differt ab auctione non-viventis, quod crescit per materiæ intussusceptionem, non per additionem externam seu meram accretionem.[1]

Dicitur 2°. *debitam quantitatem acquirit;* constat enim esse determinatam magnitudinem cuique specici viventis propriam, in quam individua tendunt et ultra quam non augescunt. Auctio igitur consistit in evolutione corporis viventis ope suæ operationis immanentis ex statu imperfecto seu cellula germinali ad statum perfectum. Quo ordine cellula primitiva sese explicet, multiplicet, varieque modificet ut pedetentim efformet totum organismum videri potest apud physiologos et botanicos.[2]

[1] A crystal is a mass of homogeneous particles which, when collected together, build up a regular edifice. Add new matter to this, and all that happens is that new molecules, of a similar character, are placed side by side with the old ones. But in the cell the chemical substances which are taken in are moulded to the purposes of the cell, and are broken up and converted into the very substance of the cell itself, or into by-products of various kinds. Moreover, addition of new substance to a crystal is a superficial process, but the assimilation and growth of the cell is interstitial in its character, and there is a fundamental difference between the two processes — (**Windle**, *The Secret of the Cell,* p. 16).

[2] Life starts from within and the body develops, not in size merely like a snowball, but by a complex series of cell divisions, cell growth and cell differentiation, by which in the more complex organisms different tissues appear from the cells, various organs arise and group themselves into apparatuses for physiological purposes, first of all for the nutrition of the organism. . . As Minot has shown, certain changes which may be considered as degenerative appear very early. The rate of growth, he shows, is continually diminishing. In the early stages it is immense, gradually it falls off. . . The changes throughout early development are, of course, the more striking, but after complete development there are changes of relative size in the organs, and finally degenerative changes which precede the close of life. . . In short, the organism shows its period of development, of comparative stasis at its prime, and of gradual decay, and yet without any boundary lines between these different states, and moreover with the simultaneous manifestation in different tissues and organs of both increasing efficiency and of degeneration—(**Dwight**, *Thoughts of a Catholic Anatomist,* pp. 125-127).

Facultas auctionis non habet organum speciale, sed per totum organismum diffunditur.

189. Generatio. Generatio alia dicitur vitalis, alia communis. *Communis* consistit in eductione novæ formæ e materiæ potentia (n. 117, 5°); generatio autem *vitalis* est « *origo viventis a vivente principio conjuncto, in similitudinem naturæ* » **S. Th.**, 1, q. 27, a. 2).

Dicitur 1°. *origo,* ut indicetur realis et activus influxus generantis in rem generatam.

Dicitur 2°. *origo* **viventis** *a* **vivente** *principio: (a)* ut generatio *vitalis* a *communi* distinguatur; non-vivens *(v.g.,* sudor), etiamsi a vivente originem habeat, non dicitur proprie generari; *(b)* ut indicetur rationem sufficientem novi viventis debere esse aliud vivens. Unde, a notione generationis excluderetur, si daretur, « abiogenesis», *i.e.,* origo viventis a materia anorganica seu bruta.

Dicitur 3°. *principio* **conjuncto**, quia vivens generatum ex ipsa generantis substantia procedit, et proinde, saltem in initio generationis, debet quodammodo cum generante esse conjunctum. Functio generativa in organicis hoc sibi habet munus proprium ut germina individuorum ejusdem naturæ præparet. Unde, aves, quæ ex ovis alienis pullos excludunt, non sunt horum parentes, quum ab illis ova nec præparata nec fecundata fuerint. Quo vero intimius conjungitur vivens generatum cum generante, eo perfectior est generatio. « Unde, in divinis adest perfectissima generatio atque ineffabilis, quia Verbum semper est in Patre, a quo procedit et gignitur, eamdem numero naturam accipiens » (**Urráburu**, *Psych.,* v. i., p. 670).

Dicitur 4°. in **similitudinem** *naturæ,* ut indicetur generatum debere cum generante convenire in natura, si non individuali, saltem specifica, juxta illud: omne agens agit sibi simile. In hoc consistit ratio formalis actionis generativæ. Nec sufficit, ut hæc similitudo quasi per accidens sequatur, sed requiritur, ut ipsa actio generativa, natura sua, tendat in productionem viventis ejusdem naturæ.[1]

[1] « Actio, qua Eva producta est ex Adami costa, non fuit generatio, nec Adam dici potest Evæ pater, quia licet terminus ablatio-

190. Consectaria. 1°. Explicata generationis definitio respicit in recto generationem passivam; in obliquo vero generationem activam, quæ est *actio, qua vivens producit aliud sibi in natura simile.*

2°. Prædictis operationibus inter se collatis, prima *in ordine temporis* est nutritio; *in ordine dignitatis* prima est generatio, tum quia est veluti complementum ceterarum, tum quia per ipsam vivens speciei conservationi providet, et sic quodammodo pro seipso perpetuitatem nanciscitur.

3°. Triplex datur generatio novorum viventium: *scissipara, gemmipara, ovipara.* Prior habetur per meram mechanicam partitionem plantæ vel animalis inferioris; altera obtinet in quibusdam organismis, in quibus quædam partes in gemmas exturgere incipiunt et mox in nova viventia se evolvunt.[1]

191. Ad primum stadium generationis *oviparæ* (quæ nimirum non deest viventibus inferioribus, sed sola competit perfectioribus), duo concurrunt principia, alterum fecundans (*e.g.*, fovilla in plantis), alterum fecundabile seu cellulæ germinales, vel etiam ovum; utriusque unio constituit ovum fecundatum.

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nis costæ fuerit specifice similis homini, unde ablata illa est, non tamen erat actio de se ac natura sua ordinata ad novum individuum ejusdem speciei obtinendum. Hæc quoque postrema definitionis nota convenit generationi divinæ: terminus enim illius est Persona Filii, qui simillimus est Patri, eamdem cum ipso possidens substantiam ex tali processione acceptam. Et quamvis tum Filius tum Spiritus S. eamdem accipiant a Patre naturam, eique sint simillimi; nihilominus processio Verbi est ac dicitur *generatio*, non autem processio Spiritus S., quia Verbum procedit per intellectionem, et Spiritus S. per amorem: intellectio autem, secus atque amor, est operatio per se et essentialiter assimilativa termini, siquidem est imago perfectissima objecti cogniti. Cum itaque Pater ex cognitione perfectissima et comprehensiva sui producit Verbum seu Filium, hic ex vi talis processionis nequit non esse Patri similis et imago substantiæ ejusdem » — (**Urráburu**, *loc. cit.*).

[1] The lower grades of animal life, corals, for instance, are reproduced by gemmation or by fission, — in simpler phrase, by buds which under the form of embryos separate off from the parent animal, or by the severance of a completely organised offspring from its parent, — in both cases, independently of the ordinary immediate generative process — (**Harper**, v. ii., p. 651).

Do ovo fecundato quæritur, utrum ab initio anima informetur. Apud recentiores physiologos et philosophos necnon theologos omnino communior est sententia affirmans ovum fecundatum reapse esse animatum et quidem anima specifica, licet tale ovum ob causas extrinsecas diu permaneat omni actu vitali destitutum (p. 216); quod si adsint debitæ conditiones, ovum, simul atque fecundatur, se evolvere in organismum perfectum incipit; quæ evolutio, quum sit actio immanens seu vitalis, et eodem plane modo fiat ac reliquum vitæ vegetativæ exercitium postulat principium vitæ seu animam.

Veteres, e contra, docuerunt ovum fecundatum non esse actu animatum, sed virtute tantum, quatenus, nempe, ut docet *S. Thomas* (1, q. 118, a. 1), existit in tali ovo quædam vis activa et formativa a parente derivata, quæ e potentia materiæ educit animam vegetativam; postea (si agitur de embryone animalis) evolvitur anima sensitiva, desinente anima vegetativa; tandem (si agitur de homine), anima rationalis creatur et infunditur, quando ope animæ vegetativæ et sensitivæ corpus ad ejus receptionem satis disponitur *(cf.* n. 395 sqq.).

§ 2. De Origine Vitæ Organicæ.

192. Qui originem mundi per creationem infitiantur, triplici ratione originem vitæ organicæ explicare conantur. Alii enim (apud *Pesch,* Nat. Phil., v. ii., p. 267) existimant prima germina organismorum a cælestibus corporibus ad terram vehicula aerolithorum delata fuisse. Ita etiam *Lord Kelvin* et *Helmholtz*. Quæ theoria, ne alia dicantur, non solvit quæstionem de vitæ origine, sed eam ad aliquod corpus sidereum transfert.[1] Alii *panpsychistæ* satis arbitrarie fingunt omnia corpora primitus, seu potius ab æterno, vita fuisse instructa, nonnulla autem illorum

[1] Sir William Thompson [Kelvin] suggested that life might have been salvaged from the ruins of other worlds and carried to our own by means of meteorites or fragments thrown off from life-bearing planets. . . These meteorites discharged from bursting planets might carry germs to distant planets like the earth, causing them to become covered with vegetation. Against this theory stands the

de cursu temporis vitam amisisse, ita ut corpora anorganica revera sint cadavera. Hæc assertio, præterquam quod æternitatem entium finitorum a se viventium ponit, in multis certissimas scientiarum naturalium conclusiones offendit.[1]

193. Alii tandem ad originem viventium explicandam recursus habent ad theoriam, quæ vocatur

Generatio Spontanea.

Quæ est *origo viventis a materia anorganica* seu *absque interventu germinis viventis*. Et ita nominatur, quia vivens *sponte* et absque parente e materia pullulare censetur. Vocatur etiam *abiogenesis* (ἀ βίος γένεσις), et sic distinguitur a *biogenesi*, quæ importat originem viventis *a vivente*, quæque dividitur in *homogenesim* seu originem viventis a vivente ejusdem speciei, et *heterogenesim* (generationem

fatal objection that the transit of a meteorite from the nearest stellar system to our own would require an interval of 60,000,000 years. It is incredible that life could be maintained through such an enormous lapse of time. Even from the nearest planet to our earth the duration of the journey would be 150 years. Besides, meteorites are heated to incandescence while passing through the atmosphere, and any seeds they might contain would perish by reason of the heat thus generated — (Barry-O'Toole, *The Case against Evolution*, p. 182).

[1] Science tells us with certainty two things about life: — 1. In the past there was a time when life was not on the earth. 2. In the present, life comes from antecedent life and from that only. There was a time when life was not on the earth. *(a)* Geology and palæontology prove a condition of the earth when life did not and could not exist — when, in fact, its surface was in a molten state, and necessarily at an enormously high temperature. Proof of this primitive condition is seen in the lower strata of rock, which have evidently set from a state of fusion. Of course these rocks contain no trace of life. *(b)* The leading materialists admit all this; it is, in fact, part of their system. Virchow: — « There has been a beginning of life, since geology points to epochs in the formation of the earth when life was impossible, and when no vestige of it is to be found », . . . Tyndall: — « There was a time when the earth was a red-hot molten globe, on which no life could exist. In the course of ages its surface cooled; but, to quote the words of one of our greatest *savants*, when it first became fit for life, there was no living thing upon it » — (Gaynor. *The New Materialism*, p. 83).

æquivocam) seu originem viventis a vivente alterius speciei. Attamen voces generationem spontanean et heterogeneam plerique sine discrimine adhibent.

Materialistæ potissimum, ut distinctionem essentialem inter viventia et non viventia e medio tollant, et originem vitæ absque Dei influxu explicent, patrocinium generationis spontaneæ suscipiunt. Simul atque, inquiunt, terra nostra ad illum statum pervenit, qui aptus esset ad existentiam organismorum, vires materiæ brutæ primitivas et maxime elementares viventium formas produxerunt. Ex quibus deinde formis tota multitudo ac varietas viventium inferiorum et superiorum gradatim evoluta est.[1]

194. Hic distinguendum est inter generationem spontaneam antiquorum et modernorum. *Aristoteles, S. Aug.*

[1] « I grant (says Virchow) that if anyone is determined to form for himself an idea of how the first organic being came into existence of *itself,* nothing further is left than to go back to spontaneous generation. But whoever recalls to mind the lamentable failure of all the attempts made very recently to discover some decided support for it, will feel it doubly serious to demand that this theory, *so utterly discredited,* should be in any way accepted as the basis of all our views of life». Nevertheless this demand has to be made by our « philosophers ». There is for them no possible escape from it. The origination of life from dead matter is « a necessary implication of the evolution theory » ; and so, in spite of facts, analogy, authority, and common sense — though without « a shadow of trustworthy direct evidence» or « a single positive fact» to support it, though « utterly discredited » and « absolutely inconceivable», still it *must* have happened. Otherwise, of course, « inconceivable creation » — *quod absit. . .*

Haeckel also declares some form of spontaneous generation to be « a necessary part of the doctrine of evolution». Somehow and somewhere in the past a living cell originated just once from the fortuitous concourse atoms. True, he admits that « there is no experimental evidence in its favour » ; but that is of no consequence. The fact that it is « a necessary part of the doctrine of evolution» and the only refuge from « inconceivable creation » is surely evidence enough — (**Gaynor**, *op. cit.*, p. 95).

How comes it. . . that the majority of scientific men accept the doctrine of spontaneous generation? Two reasons may be assigned: the formal method of science, and a dread of the hyperphysical and supernatural which scientists regard as a cloak of ignorance. In his first epoch-making book on the origin of species, Darwin recognised the creation of primitive types as a necessity. But his more advanced followers whispered in his ear : *principiis obsta.*

(De civitate Dei, l. 19, c. 7), et patres generatim, quos sequebantur scholastici, putabant viventia inferiora absque ullo propriæ speciei germine generari posse per virtutem ab initio mundi rebus omnibus a Deo impressam, quæ, datis adjunctis opportunis, producere possent vegetalia et animalia inferiora. Multum igitur differt hæc generatio spontanea ab illa, cui materialistæ adstipulantur. Nam *(a)* patres et scholastici nonnullas tantum plantas et animalia *(v.g.*, vermes, muscas, mures, reptilia) hoc modo oriri censebant; *(b)* ad talem generationem vires materiæ anorganicæ sufficere minime existimabant, sed præter organismum vivum putridumve, aut terram quibusdam activis dispositionibus donatam, influxum cælestium corporum requirebant; *(c)* Deum fecerunt auctorem omnis virtutis corporum terrestrium et cælestium, quam in productionem spontaneam viventium influere putabant; *(d)* demum, ad hanc generationem admittendam inducti sunt ob ignorantiam rerum naturalium et carentiam mediorum, quæ ad minutiora naturæ investiganda nunc præsto sunt. Nil igitur mirum, si ad explicandam originem viventium viliorum, quæ, quantum comperiri poterant, non habebant parentes, recurrebant ad generationem spontaneam. Nec talis generatio intrinsece absurda reputanda est. Nam, quum organismus superioris ordinis eminenter contineat perfectiones interiorum, sine absurdo dici potest hæc ab illo, sub quibusdam conditionibus faventibus, Deo sic disponente, produci posse. Deinde,

Resist beginnings; nip the principle in the bud. Admit the interference of a supernatural power in one case, and it cannot be eschewed in others. Darwin hearkened to their voice, and in his later work, *The Descent of Man*, withdrew the concession he had made. Others shrank from cutting away the bridge from under them, and stopped short. They merely rejected the common view of creation, according to which creatures were supposed to come forth ready made from the Creator's hand. If creation, they say, be considered not merely as a thing of the past, or as a momentary act, but as a coherent divine force abiding in all time, then the doctrine of descent is so far from denying creation that the natural history of evolution alone gives a true idea of creation. But the chorus and many earnest men of science cry down even this scanty concession — (Schanz, *A Christian Apology*, v. i., p. 139).

potuit Deus materiæ impertiri quandam virtutem activam, quæ in potentia contineret vitam organicam exinde per naturalem transitum evolvendam.[1]

195. Generatio autem spontanea, quam materialistæ tuentur, experientiæ et rationi contradicit: 1°. *Experientiæ,* quæ jampridem multis observationibus diu et accuratissime repetitis demonstrat tum animalia tum plantas non alio modo oriri quam ex animalibus et plantis ejusdem speciei. Nec potest afferri ullum factum, quo constet in organismis viventibus mortuisve aut in materia anorganica posse oriri vivens vel imperfectissimum, postquam destruuntur germina, quæ in eis latere solent, et cohibentur germina, quæ in aere suspensa continentur.[2]

Jamvero, factum ad ordinem physicum pertinens, quod, peractis multis sedulisque observationibus, nusquam de-

[1] Though the genesis of living from not living matter has never yet been demonstrated, it is not, therefore, impossible that it may some day fall to the lot of some fortunate investigator to announce such a discovery, and to have his discovery recognised by a scientific jury. And if this were to be the case we may be quite sure that there would be hosts of persons prepared once more to announce the annihilation of all religion by the last great scientific discovery. Such persons would be forgetful if not ignorant of the fact that the theory of spontaneous generation was held by many, perhaps by all the Fathers of the Church, and that St. Thomas himself, when rebuking Avicenna for teaching spontaneous generation, did so because Avicenna held the thesis that it was by the power of matter alone that life arose, whereas as St. Thomas says, if matter does produce life it is because the Creator has given it the power to do so. In fact, such a transition from non-living to living matter at some period is far the most likely thing to have occurred [?] What we claim is that, if it occurred, it did so at the will of the Creator and by virtue of the powers which He gave to it, nor do we deny that it is possible that that power is still inherent in non-living matter, and may even be continually manifested, though we are unable to recognise the fact. . . While, however, we allow all this, we must admit, with all who have studied the subject, that no approach has been made to any synthesis at all approaching that which would constitute living matter, and that those syntheses of organic compounds which have been arrived at do not afford any help in the direction in question as some have thought that they do — (**Windle**, *What is Life?* p. 83).

[2] M. Pasteur, known to the world at large by his discoveries on the virus that produces hydrophobia, has shown better than anyone that without germs there is no generation, and his experi-

tegi potest, jure negari potest et debet, eoque magis, quod omnes organismi, quorum ortus experientiæ subjicitur, visi sunt ab aliis ejusdem naturæ organismis procreari. Vi autem inductionis idem tenendum est de organismis, qui sæculis præteritis apparuerunt. Verum, contra sua ipsorum principia materialistæ, dum concedunt nullum

ments in the matter have been so conclusive that the principal materialists declared themselves of his opinion, and gave up the contest. Tyndall, Berthelot, and Paul Bert are of the same mind in this matter as M. Pasteur — (**Slevin**, *Order in the Physical World*, p. 172).

Redi had no trouble in establishing that the worms which filled putrified meat owe their origin to eggs laid by flies, and that the worms themselves are nothing else than larvæ of future flies. Vallisnieri discovered that the insects which infest our apples and pears are larvæ of a nocturnal butterfly, and result from the development of an egg introduced into the incipient fruit at the time of the blooming. . .

Forced to acknowledge their error in the field of entomology, the adherents of spontaneous generation retreated upon the domain of the infinitely small animalcula. They pretended that infusoria and other microscopic animals can spring spontaneously if not from inorganic matter, at least from organic elements which belonged to living beings.

In defence of this argument they fall back on the unknown. On account of the imperfect means of investigation, it could not be shown that reproduction does not take place in this way. However, the laws of analogy pointed rather to the opposite opinion. . . It needed the labours of Pasteur to solve the question in a definite manner. The experiments of this famous *savant* began in the year 1858. Provoked in some way by two zoologists, Professors Pouchet and Jolly, Pasteur demonstrated to his colleagues of the Academy of Science that no organised being, however small, developed in a liquid when the germs existing in neighbouring bodies are completely shut out. For this reason it was sufficient to raise the temperature of the liquid to 100° R., and to cork up the bottle which contains it with gun-cotton. The latter substance, while permitting the outside air to penetrate during the cooling, will keep back solid particles, and with them the germs of living beings. Under these conditions, if the experiment is performed with some skill, not only no animalcules will develop in the liquid, but this liquid, though suitable for fermentation, will never change. . .

The result of Pasteur's experiments proved, therefore, in the most conclusive manner, that all the appearances of spontaneous generation arose from nothing more than from the deposition of the germs of organisms which are constantly floating in the air — (**Thein**, *Christian Anthropology*, pp. 34-38).

vivens in præsens spontanee esse generatum, in favorem theoriæ provocant ad tempora remotissima, quando terra erat adhuc nova; licet enim esset nova, vires ejus essent ejusdem speciei cum illis, quæ hodie in ea vigent.[1]

Placita materialistarum adversantur non modo experientiæ sed etiam

2°. *Rationi,* quia ortus viventis sola vi materiæ anorganicæ perinde est ac effectus perfectior sua causa totali, et ideo effectus absque causa proportionata; res enim perfectionis essentialiter inferioris non potest propria virtute esse causa proportionata effectui altioris ordinis.

196. Consectarium. Res organicæ ab alia causa originem repetere nequeunt nisi a viribus materiæ elementaris vel a potentia et influxu ipsius Dei Creatoris; *atqui* solæ vires materiæ sunt prorsus impares ad eas producendas;

[1] Men of science can make no objection to the following indignant words of Quenstedt. He says: «To the scientist, to understand means to *see,* and he can only draw conclusions on this basis. If, nowadays, even the smallest plant cannot come into existence without a germ, what thoughtful *savant* would venture rashly to assert that the whole beautiful vegetable and animal world, including man, has been generated only from dead earth? But to many the idea that the Creator has power to breathe life into the dead lump of clay is so unwelcome that they would rather embrace the wildest dreams in order to prove themselves apparently right. Yes, they say, it is easy to explain why the earth *nowadays* brings forth no living creature: now it is in its old age; but when it was young, things were different. It is amusing to hear these men, who usually subject to the sharpest criticism the slightest instinctive revolt of the mind against the laws of nature, when they come to the beginning of organic life, tell us how, then, in the bosom of the formations every speck of mud suddenly teemed with life, and describe the unwearied creative power of the dead earth. . . As students of nature, however, we may draw conclusions only from accurate observations; but we must always define the limits beyond which we cannot go. If Unger is right in saying that not the meanest plant can spring from out the soil without a germ, must not a sober investigator conclude that what cannot occur to-day under the existing laws of nature, can never have occurred? For it is on this very fixity of these laws that the whole structure of earthly knowledge rests» — (**Thein,** *ib.,* p. 52).

Reinke showed long ago that it was absolutely unreasonable to assume that, in some previous age, completely different conditions, which would have rendered spontaneous generation possible, prevailed on our earth — (**Wasmann,** *Problems of Evolution,* p. 99).

ergo earum origo influxui Dei Creatoris tribuenda est. Quæ conclusio confirmatur auctoritate præclarissimorum scientiarum naturalium cultorum.[1] Hoc ab omnibus theistis ut certum admittitur; necnon ut certum admitti debet organica non fuisse a Deo producta sine concursu rerum materialium *(« producat terra. . . producant aquæ. . . »)*. Qui concursus in eo constitisse videtur, quod ope virium materialium inductæ sunt in materiam illæ dispositiones, quibus materia apta fuit reddita ad vitam recipiendam. In materia sic disposita Deus vitam produxit, non creatione proprie dicta, sed eductione formarum vitalium in materia disposita ut in subjecto passivo et receptivo. « Sicut igitur Deus legem sibi imposuit, ut res omni tempore conservet easque in operando cooperatione sua adjuvet, utque hominum animas usque creet, ita pro illa forma-

[1] No system of the universe can dispense with a First Cause, eternal and self-existent: and the First Cause must necessarily be the living God, whose will is the ultimate force and the origin of natural law — (**Dawson**, *Modern Ideas of Evolution*, p. 228).

I cannot admit that, with regard to the origin of life, science neither affirms nor denies Creative Power. It is not in dead matter that we live and move and have our being, but in the creating and directing Power which science compels us to accept as an article of belief. We cannot escape from the conclusion when we study the physics and dynamics of living and dead matter all around. Modern biologists are coming, I believe, once more to a firm acceptance of something beyond mere gravitational, chemical, and physical forces; and that unknown thing is a vital principle. . . We only know God in His works, but we are absolutely forced by science to believe with perfect confidence in a Directive Power — in an influence other than physical, or dynamical, or electrical forces. Cicero. . . denied that men and plants and animals could come into existence by a fortuitous concourse of atoms.

There is nothing between absolute scientific belief in a Creative Power and the acceptance of the theory of a fortuitous concourse of atoms. Just think of a number of atoms falling together of their own accord and making a crystal, a sprig of moss, a microbe, a living animal. Cicero's expression «fortuitous concourse of atoms» is certainly not wholly inappropriate for the growth of a crystal. But modern scientific men are in agreement with him in condemning it as utterly absurd in respect to the coming into existence, or the growth, or the continuation of the molecular combinations presented in the bodies of living beings. Here scientific thought is compelled to accept the idea of Creative Power — (**Lord Kelvin**, ***Nineteenth Century,*** June, 1903).

tionis ætate legem sibi statuisse videtur, ut debito tempore et loco res organicas variasque viventium species efficeret. Et illa quidem sæpius iterata productio neque miraculi rationem habet neque creatio dici potest; non enim fiebat præter naturæ ordinem et exigentiam neque ex nihilo » (**Pesch**, *Phil. Nat.*, v. ii., p. 271).

197. At si quæritur, *quomodo* isti primi organismi producti sint, non unum est responsum. Quæ enim hac de re sacra Scriptura nos docet, hæc sunt *(Gen.*, c. 1): *(a)* origo viventium Dei voluntati debetur; *(b)* eidem voluntati debetur, quod in eis producendis terra concurrit; *(c)* eisque Deus tribuit vim seipsa propagandi secundum species suas. Minime vero docet, *(a)* utrum viventium germina tantum vel viventia in statu valde imperfecto an in statu perfecto, cum illa nimirum magnitudine et virium perfectione, quæ cuique juxta speciem suam conveniebat — quod est magis congruum — condiderit; *(b)* utrum diversas viventium species extinctas ac superstites immediate per se efformaverit, an paucas tantum inferiores, ex quibus deinde successive evolvebantur superiores. De his quæstionibus sacra Scriptura aperte non loquitur, sed eas hominibus investigandas relinquit.[1] Illud tamen fatendum est non solum animam humanam (cujus creatio est philosophice certa), verum etiam corpus primi hominis sensu obvio sacræ Scripturæ, non ex viventibus inferioribus evolutum fuisse, sed a Deo immediate fuisse conditum. Præterea, juxta communiorem theologorum sententiam illa sola theoria est cum sacro textu confor-

[1] We must strongly emphasise the fact that the biological idea of species has nothing whatever in common with the Scriptural conception or with that of scholastic philosophy. The Mosaic story of Creation signifies nothing more than this, that ultimately all organisms owe their existence to the Creator of the world. The concrete law has nothing to do with the proposition of faith regarding creation. The enumeration of certain popular groups of organisms, such as fruit trees, draft-animals and the like, could have no other design than to manifest to the simplest as well as to the most cultivated mind the action of the Creator of all things: at least, there can be no question of a scientific conception of genera and species— (**Muckermann**, *Cath. Encycl.*, v. v., p. 660).

mis, quæ species inferiores non per evolutionem naturalem, sed per immediatam divinam productionem, originem sumpsisse affirmat *(cf.* n. 211).

ART. II.

DE PRIMO PRINCIPIO VITÆ INFERIORIS.

198. THESIS XXII. — Primum principium vitæ inferioris omnino pendet in esse a materia, cujus est forma substantialis.

Stat. Quæst. Primum principium vitæ seu anima est principium substantiale. Quoad modum existendi, duplex hujusmodi principium distinguendum est: aliud immateriale et subsistens, quæ est anima humana; aliud materiale et non subsistens. Tales esse affirmantur anima belluina et anima vegetativa. Hæ animæ vocari solent formæ *materiales,* non quod in se materia constent, sed quia e materia educuntur, et vi suæ essentiæ ad constituendum cum materia unum compositum ita ordinantur, ut absque tali unione non possint, saltem naturaliter, existere. Qua ex causa intelligitur, cur dicantur *non subsistentes* et *inferiores.*

199. Prob. Thesis. Pars 1ª. *(animæ inferiores pendent in esse a materia).* Arg. — Qualis est operatio, tale quoque est principium, a quo operatio procedit, seu, modus operandi modo essendi respondet eumque manifestat; *atqui* operationes animæ vegetativæ et animæ sensitivæ sunt omnes intrinsece dependentes a materia; *ergo* hæ ipsæ animæ dependent a materia in suo esse.

Expl. maj. Quum natura causæ eruatur ex effectibus, dependens aut independens a materia in essendo dicendum est principium vitalium operationum, prout in agendo intrinsece dependens aut independens a materia se præbet.

Prob. min. Operationes vitæ vegetativæ et vitæ sensitivæ fieri nequeunt absque organis. Et sane, operationes vitæ vegetativæ sunt nutritio, auctio, generatio; *atqui* hæ operationes nonnisi in organismo possunt dari eique sunt essentialiter alligatæ, quum ad formationem, conservatio-

nem et reproductionem organismi tamquam ad proprium finem ordinentur. Operationes sensitivæ sunt pariter organicæ *(Th.* xxiv.); *ergo.*[1]

Dices: Quum aliud sit esse, aliud operatio, fieri potest, ut anima pendeat a materia quoad operari, quin pendeat quoad esse; et revera, anima rationalis est independens a materia in essendo, minime vero in operando.

Resp. Licet aliud sit esse, aliud operatio, tamen operatio, utpote effectus, debet suo principio seu causæ efficienti congruere ejusque naturam manifestare, quum quiquid effectui insit, a causa derivetur; eo igitur quod animæ inferiores nullam possunt exserere operationem nisi cum intrinseca dependentia a materia, merito concluditur ipsas animas, unde dimanant operationes, esse in essendo a materia dependentes. Quod attinet ad animam rationalem, et ipsa in suis operationibus vegetativis et sensitivis intrinsece dependet a materia, at in operationibus sibi propriis nonnisi extrinsece, et dum corpori unitur, habet a materia dependentiam.

200. Pars 2ª. *(anima est forma substantialis corporis viventis).* **Arg. I.** — Principium, quo res constituitur in aliqua specie et ab aliis rebus essentialiter distinguitur, est ejusdem forma substantialis; *atqui* principium, quo vegetalia et animalia constituuntur *viva* et a non-viventibus distinguuntur, est ipsa anima. Nam in omni corpore duplex reperitur principium substantiale, alterum passivum et omnibus corporibus commune *(materia prima),* alterum activum et his illisque corporibus proprium *(forma substantialis); atqui* principium vitæ nequit esse principium

[1] Even the highest psychic functions, of which a brute animal is capable, those of the *internal senses* (imagination, sensitive memory, etc.) which play such an important part in instinctive activities, all are *organic* functions. All of them admit of localization in some cortical nerve-centre. Hence the entire being of the brute soul is «immersed in matter». It is, in scholastic terminology, the «substantial form» of the body and nothing else but that, *i.e.,* its whole *raison d'être* is to give life, vegetative and sensitive, to the body. This is implied when we say that the brute soul is *intrinsically* dependent on the body — **(Gruender,** ***Psychology without a Soul,*** p. 146).

passivum, quum vivere sit agere;—nequit esse principium commune, secus omne corpus viveret. Restat igitur, ut sit principium activum et proprium, seu, ut sit forma substantialis. *Ergo* anima est forma substantialis corporis viventis.

II.—Ut corpus vivat, oportet, ut *seipsum moveat (se nutriat,* etc.); vita enim in immanentia operationum consistit; *atqui* seipsum movere nequit, nisi principium vitæ sit principium sui *esse* constitutivum, secus enim non seipsum moveret, sed esset massa mortua, quam anima, veluti principium in essendo et operando a materia independens, inhabitaret et moveret;[1] id quod minime admitti potest, ut constat ex dictis n. 199.

201. Cor. 1. Ergo animæ inferiores non creantur, sed generantur: —*Non creantur,* quia creatio est productio totius substantiæ in se completæ (*v.g.*, angeli), vel substantiæ incompletæ sed subsistentis (animæ humanæ); animæ autem inferiores nec completæ sunt nec subsistentes; *generantur,* quia formæ substantiales, quæ non creantur, ex transmutatione materiæ resultare dicendæ sunt; *atqui* præter virtutem generativam, quæ viventibus corporeis competit, nulla alia virtus assignari potest, cui hæc eductio e materia tribuatur. Unde, quod in generatione plantæ vel animalis proprie et per se fit, est compositum, non vero anima. « Ratio est, quia ejus est per se primo fieri, cujus est esse, cum fieri tendat ad esse: sed id proprie est, quod subsistit; ergo id proprie fit: sed hæ formæ non subsistunt sed composita ex ipsis; ergo ad composita proprie et principaliter terminatur actio. Majoris autem claritatis gratia distingui solet duplex terminus, scil., *ut quod* et *ut quo*. Compositum ergo est *terminus qui* seu *ut quod,* quia illud per se primo fit;

[1] The living being is one, but, like the inorganic being, it is composed of a twofold principle, matter and form. The substantial form, principle of determination, unity and activity, is, in the living being, the soul... It is not something extrinsic to living matter, guiding it as the pilot steers his vessel, but it is an intrinsic determining principle of matter, which together with it forms one complete living substance — (**Dubray**, *Introductory Phil.*, p. 438).

nam illud maxime intenditur per generationem, et in id ultimate terminatur generatio. *Terminus* autem *quo* est forma, quia fit ut per eam compositum constituatur» (Suarez, *Meta., Disp.* 15, s. 4, n. 4).

Cor. 2. Ergo animæ inferiores non sunt immortales; eatenus namque existit anima sensitiva vel vegetativa, quatenus cum materia unitur ad organismum constituendum. Pereunte igitur organismo, perit anima organismum formaliter constituens et ab eo in esse dependens; animæ autem, quæ destructioni compositi non est superstes, proprietas immortalitatis non competit.

CAPUT TERTIUM.

De Origine Specierum Organicarum.

202. Ex superioribus constat prima viventia fuisse a Deo producta; hic autem quæritur, quomodo ortæ sint diversæ species, in quas viventia organica distincta atque divisa existunt. Species apud cultores historiæ naturalis significat collectionem individuorum plus minusve similium, inter quæ habetur filiatio indefinite fecunda. Duo itaque sunt speciei characteres: unus *morphologicus*, qui consistit in similitudine organismorum; alter *physiologicus* (et principalior), qui consistit in constanti fecunditate prolis. Individua autem ejusdem speciei notis accidentalibus differunt; collectio vero individuorum, quæ præ ceteris ejusdem speciei nonnullas notas accidentales habent in communi, constituit *varietatem*. Quodsi hæ differentiæ generatione transmittuntur, varietas vocatur *stirps* (race).[1]

[1] According to the definitions universally accepted by all *savants* before Darwin, *species* is a collection of individuals having the same essential qualities, issued from the same primitive pair, and having the power to reproduce themselves indefinitely. A group of species which have common characters takes the name of *genus*. The species is unchangeable in its essential characters, but its accessory characters can change under the influence of external agencies, and thus give rise to varieties and races. We call *varieties* a group of individuals of the same species which differ from the common type by accidental modifications of the species. These may be

203. Jamvero, stirpes ejusdem speciei non raro inter se plurimum differunt, et quæstio oritur, num fieri possit, ut differentiæ primo leviores adeo decursu sæculorum crescere possint, ut evadant stirpes specifice distinctæ seu novæ species. Quod si negas, logice infertur diversas species viventium, quæ terram occupant vel occuparunt, fixas esse et fuisse. Et hæc est theoria *fixitatis specierum,* quæ usque ad hæc ultima tempora viguit non solum apud philosophos et theologos sed etiam apud scientiarum naturalium cultores.

204. In sententia opposita, quæ vocatur systema *evolutionismi, transformismi, descendentiæ,* omnes species plantarum et animalium per lentam et continuam variationem stirpium originem duxisse censentur ab uno vel paucis organismis primitivis.[1]

Quoad extensionem sui systematis evolutionistæ multum differunt; commode vero totum systema dividi potest

due to climate, food, unlimited range, exercise, impressions through the nervous system, breeding, crossing, etc. These modifications are not essential and specific, but changeable and unstable. In virtue of the law of reversion, varieties naturally return to the primitive type, if extraneous causes do not force individuals of the same variety to couple in order to perpetuate their race conformably to the law of heredity. When the particular characters which constitute a variety become fixed and perpetuated in a constant manner, they form a *race* — (**Thein, *Christian Anthropology,*** p. 67).

[1] The history of transformation begins with the nineteenth century. Before this time we find only hints and vague suggestions which have no scientific basis. *(a)* Lamarck denies the fixity of, and the sharp limits between, species. Changes in the environment create new needs. New needs call forth new activities and create new organs to meet these needs. The use of organs perfects them, while their disuse allows them to become atrophied. These various modifications are transmitted by heredity. *(b)* Geoffroy Saint-Hilaire, as partisan of the mutability of species, and Cuvier, as partisan of their fixity, opposed each other, the latter being victorious over his adversary. *(c)* In his *Origin of Species* Charles Darwin advocates the theory of organic evolution by *natural selection*. . . Among other prominent transformists of the same period must be mentioned Wallace, Huxley, Spencer, and Haeckel. *(d)* To-day the fact of evolution is commonly accepted, and is hardly ever discussed, although this position seems to be somewhat rash and premature. The main discussions are on the modes and factors of evolution — (**Dubray, *op. cit.,*** p. 444).

in evolutionismum *rigidum* et *mitigatum*. Contra utrumque sequens statuitur thesis.

205. THESIS XXIII. — Evolutionismus rigidus rectæ rationi adversatur; mitigatus nullis factis comprobatur, pluribus adversatur.

Stat. Quæst. Juxta evolutionismum *rigidum* primitus extitit sola materia inorganica, ex qua, vel ob internam necessitatem sese evolvendi vel ob quemdam fortuitum et felicem atomorum concursum, enata sunt pauca (fortasse unum dumtaxat) entia organica maxime elementaria et indeterminata.[1]

Inter hæc primitiva viventia (vel, si unum tantum admittitur, inter ejus prolem) apparet aliqua variabilitas, quæ *hæreditate* in postera transmittitur. Sicut enim homo potest selectione artificali producere et productas conservare et augere varietates et stirpes in plantarum cultura et animalium procreatione, ita natura *selectione naturali* potest conservare proprietates, quæ ad vitam sustinendam aptiores inveniuntur. Quæ selectio fit, inquiunt, per *luctam pro existentia* (struggle for existence). Crescente enim in dies numero individuorum, natura tandem non potest omnibus satis nutrimenti suppeditare; quo contingente, ad vitam sustentandam oritur inter individua certamen, quia, quum omnia conservari nequeant, unumquodque se conservare conatur, et proinde aliorum interitum, saltem indirecte, machinatur. Similiter contra influxum climatis aliasque circumstantias externas necesse est luctam inire. Cujus multiplicis luctæ exitus necessarius est, ut debiliora et minus apta succumbant, *fortiora et aptiora prævaleant* (survival of the fittest). Natura itaque individua aptiora seligit, ut per ea species conser-

[1] « Evolution », as commonly explained, means nothing, if it does not mean that everything has been worked out by blind, automatic forces, and that we find in all nature no evidence of a designing mind. But for the idea that to explain the existence of nature, as we observe it, is required a First Cause, possessed of understanding and free-will, there is no tolerance, and nothing so surely arouses the anger of the more eager partisans of the New Philosophy as to hint that the world bears traces of Design — (**Gerard**, *Evol. Phil.*, p. 74).

vetur, minus aptis rejectis. Post diuturnas sæculorum series perfectiones sic paulatim acquisitæ organismos specifice novos constituunt; et ita, ut per series fere infinitas minimarum varietatum omnes species plantarum et animalium, homine ipso non excluso, evolvi possint. Ita *Darwin,* præcipuus systematis patronus, inter quem tamen et plures, qui Darwinistæ vocantur, haud leves differentiæ existunt (cf. *Breitung,* De Darwin. et Evol., «Gregorianum», Sept., 1926).[1]

206. Evolutionismus *mitigatus* in eo differt a *rigido,* quod non excludit, sed absolute postulat influxum Dei creantis et formantis primitivos organismos ac providentis, ut hi organismi sub quibusdam conditionibus ab Ipso prædeterminatis prolem perfectioris naturæ ederent

[1] . . . Geologists like Lyell, and palæontologists of the stamp of Forbes, Heer, and Goppert, grew convinced that the formation of the earth's crust and the accumulation of organic remains had proceeded slowly and steadily. . . It was natural to apply the principle to the organic world also, because at that time artificial gardening and cattle-breeding, in England especially, had been carried to such a pass of perfection. Several English naturalists, Wallace and Darwin included, essayed to introduce this method into the kingdom of nature. Brilliant success awaited Charles Darwin, with whose name the doctrine of descent is henceforth linked. . . True, he passes over the problem of the origin of life. He allows also original forms, which may have been four or five or even one in number. But, as was remarked at the time by Professor Bonn, translator of the work *(Origin of Species)* into German, only time was needed to extend the principle both in a forward and a backward direction. Haeckel and other German Darwinians volunteered to perform this congenial duty. And Darwin, in his later work, on the *Descent of Man,* overtook his vanguard. He denies the constancy of species, and flings to the winds every notion of species. Descent is the key with which he unlocks the mystery of the manifold variety of living forms. The new and fascinating element that he introduced into the doctrine of descent is an agency with the power to change species, which he derived not from fancy or philosophy, but from nature herself. He solves the problem with three agents: variability, inheritance, and natural selection in the struggle for life, or the survival of the fittest. Variability shows how parent types disappear; Inheritance explains how changes are propagated; finally Natural Selection tells how useful variations are transmitted. In the flora and fauna of to-day we see the outcome of the process which can have worked only by slow degrees, and during vast periods of time — (**Schanz**, *A Christian Apology*, v. i., p. 152).

quam sibi suisque viribus relicti progignere potuissent. Ab hac evolutione excipitur homo saltem quoad animam.[1] Hanc evolutionismi formam tuentur nonnulli catholici auctores. Evolutionismus sic explicatus non est in se repugnans; Deus namque potuit cum viribus individuorum speciei inferioris specialiter concurrere ad productionem individuorum speciei superioris.[2] Quæstio autem non est quid Deus potuerit facere, sed quid fecerit; quid autem fecerit colligimus ex testimonio sui operis, quod in stratis terrenis reliquit.

[1] The writer must confess that he cannot fathom the mentality of those who accept the evolutionary explanation, so far as plant and animal organisms are concerned, but proceed to draw the line when it comes to applying it to the human body. For if one (to borrow Du Bois-Reymond's expression) « gives so much as his little finger to » the evolutional argument from organic homology, he must end, in so far as he is consistent, in acknowledging as incontestable its obvious application to man — (Barry-O'Toole, *op. cit.*, p. 268).

[2] The theory of evolution as a philosophical conception considers the entire history of the cosmos as a harmonious development, brought about by natural laws. This conception is in agreement with the Christian view of the universe. God is the Creator of heaven and earth. If God produced the universe by a single creative act of His will, then its natural development by laws implanted in it by the Creator is to the greater glory of His Divine power and wisdom. St. Thomas says: The potency of a cause is the greater, the more remote the effects to which it extends (*C. Gent.*, iii., c. lxxvii.); and Suarez: God does not interfere directly with the natural order where secondary causes suffice to produce the intended effect (*De opere sex dierum*, ii., c. x., n. 13). In the light of this principle of the Christian interpretation of nature, the history of the animal and vegetable kingdoms on our planet is, as it were, a versicle in a volume of a million pages in which the natural development of the cosmos is described, and upon whose title-page is written: « In the beginning God created heaven and earth ».

The theory of evolution just stated rests on a theistic foundation. In contradistinction to this is another theory resting on a materialistic and atheistic basis, the first principle of which is the denial of a personal Creator. This atheistic theory of evolution is ineffectual to account for the first beginning of the cosmos or for the laws of its evolution, since it acknowledges neither Creator nor lawgiver. Natural science, moreover, has proved that spontaneous generation, *i.e.*, the independent genesis of a living being from non-living matter, contradicts the facts of observation. For this reason the theistic theory of evolution postulates an intervention on the part of the Creator in the production of the first organisms. When and how the first seeds of life were implanted in matter, we, indeed, do not

207. Prob. Thesis. PARS 1ª. *(... adversatur rationi).* **Arg.** — Effectui inesse nequeunt perfectiones, quæ a causa non proveniunt; *atqui* hoc principium metaphysicum violatur in systemate evolutionismi rigidi. Nam, admisso hoc systemate, necesse est, ut admittatur generatio spontanea (n. 193), evolutio vitæ sensitivæ a vita vegetativa, evolutio vitæ intellectivæ seu principii essentialiter immaterialis a principio essentialiter materiali. *Atqui* hic processus huc tandem redit, ut causa inferioris et imperfectioris ordinis assignetur tamquam causa per se sufficiens ad effectum superioris ordinis producendum, quod perinde est ac effectum sine causa admittere. Et revera, causæ, quæ in medio proferuntur, sunt: *(a) Hæreditas;* atqui hæreditate transmittuntur characteres specifici et principales, raro autem characteres accidentales, nisi ad hanc transmissionem efficiendam industria hominis adhibeatur. Immo, præcipua lex hæreditatis est, ut, cessante cura et violentia hominis, varietates casu vel arte productæ brevi evanescant per ipsius naturæ influxum, et typus primitivus rursus appareat.[1] Atvero, ad transmittendum variationes accidentales evolutionistæ rigidi nullam admittunt causam intelligentem et dirigentem, sed tantum causas cæcas et mechanicas, quæ utpote diversæ et non raro oppositæ, possunt variationes modo inductas mox eliminare vel detorquere. Quo igitur fieri possit, ut variationes accidentaliter et ex causis externis impressæ possint servari et ordinate transmitti ac conjungi ad efficiendas novas fixeque inter se distinctas species, inexplicatum et inexplicabile manet. Nec ulla ratio assignari potest, cur organismus inferior, qui id tan-

know. The Christian theory of evolution also demands a creative act for the origin of the human soul, since the soul cannot have its origin in matter. The atheistic theory of evolution, on the contrary, rejects the assumption of a soul separate from matter, and thereby sink into blank materialism—(**Wasmann**, *Cath. Encycl.*, v. v., p. 654).

[1] Artificial variations (unless fixed by the crossing of Mendel's «dominants» with dominants, or of «regressives» with regressives . . .) still tend to return to original conditions — (**Dwight**, *Thoughts of a Catholic Anatomist,* p. 45).

tum quærit, quod sibi est utile, habeat aptitudinem ad conservandum variationes, quæ ad ejus transformationem tendant. « Inest cuique desiderium ad conservandum suum esse, quod non conservaretur, si transmutaretur in alteram naturam; unde, nulla res, quæ est in inferiori gradu naturæ, potest appetere superioris naturæ gradum, sicut asinus non appetit esse equus; quia si transferretur in gradum superioris naturæ ipsa non esset » (S. Th., 1, q. 63, a. 3).

— *(b) Selectio naturalis;* atqui hæc, quum eam intelligentia dirigi adversarii non admittant, cæce, causis finalibus exclusis, ageret, et proinde casui tribuenda esset gradata ac ordinata specierum evolutio, quam in mundo effectam fuisse evolutionistæ affirmant; dum homo, omni intelligentia et industria adhibita, ne unam quidem novam speciem evolvere potest.[1]

— *(c) Lucta pro existentia;* atqui hæc posset fortasse finem afferre viventibus inferiorum specierum, haud vero

[1] Purposive variation is one thing, purposeless variation quite another. The first is the method of the inventor, the second of the destroyer, and yet it is to this that Darwinians look as the power capable of producing all the requisite machinery we find in nature. To this, indeed, they are compelled. If there be a force directing successive modifications in one direction, to the production of organs more and more elaborate and efficient, then must this force, and it alone, be credited with the results. The law of variation and natural selection will no more explain the production of new forces than the fact that the water from Thirlmere has perforce to run to Manchester explains how the pipes came to be laid which take it there.

It is precisely on the claim to dispense with the necessity of any such directive force that Darwinism takes its stand, and it is in variation altogether purposeless that it professes to find a sufficient instrument. It is, for example, by a succession of « slight accidental variations » in the required direction that Mr. Darwin himself explains the development of the eye from the simple apparatus of an optic nerve coated with pigment and invested by transparent membranes to the complex organ which we now behold. What such an explanation really means it is well worth while to inquire. We all know that the various friction to which bodies at the bottom of a river are exposed, inevitably changes their form, that is, makes them vary. If we were to throw in among the gravel ten thousand cubes of glass, is there the slightest probability that any of them would be shaped into a lens fit to use in a telescope? Yet this is

posset ad novas species evolvendas tendere. Nam perfectiones lucta acquisitæ vel respondent organismo vel non: si non, ei nocumentum afferunt, et proinde in deterius tantum eum mutare possunt; si vero respondent, non possunt esse causæ, quæ ejus typum fundamentalem immutent, sed potius ad eumdem perficiendum et tenaciter stabiliendum tendere debent.

208. PARS 2ª (. . . *nullis factis comprobatur*. . . . **Arg.** — Qui affirmant species viventium originem duxisse per lentam evolutionem ex paucis organismis primitivis veritatem suæ theoriæ factis inconcussis stabilire debent; ubi enim de factis agitur, præprimis ad facta observata appellandum est. *Atqui* in favorem evolutionismi neque ex tempore præsente, neque ex tempore historico, neque ex tempore præhistorico ullum factum adduci potest; *ergo*.

Prob. min. Quoad tempus præsens certum est, et ab evolutionistis ipsis admittitur, ubique terrarum vigere legem *homogenesis,* juxta quam omne vivens generat sibi simile in notis essentialibus, licet in accidentalibus generatum a generante discrepet; nec selectione artificiali nec hybridatione nec quopiam alio medio obtineri possunt individua, quæ ab aliis specie differunt.[1]

Quoad tempus historicum, apud Job, Aristotelem, alios-

exactly what we are asked to believe, that a system of variation equally random has actually done in the eye. It is nothing to the purpose to say that Natural Selection in the one case, and not in the other, would have preserved the successive approximations to the desirable form: for something worth preserving must be produced before Natural Selection can act, and the question is precisely whether anything worth preserving would ever be arrived at in such a fashion. This, the crucial point of the matter, has apparently been ignored by Darwinian writers: they assume that because improvement implies variation, therefore variation implies improvement — **(Gerard,** *Evol. Phil.,* **p. 46).**

[1] Anyone thoroughly acquainted with the results of genetical analysis and research will find it impossible to escape the conviction that there is no experimental evidence for evolution. In spite of the enormous advances made in the fields of genetics and cytology, the problem of the origin of species is, scientifically speaking, as mysterious as ever. No variation of which we have experience is interpretable as the transmutation of a specific type, and David Starr Jordan voices an inevitable conclusion when he says:

que antiquissimos auctores habentur animalium et plantarum descriptiones, quæ ad amussim concordant cum hodiernis plantis et animalibus. Immo exuviæ ac sceleti canum, felium, avium, boum, etc., in Ægyptiorum sepulcris ante annos 5,000 recondita, perfecte quadrant cum organismis nostrorum temporum. Quod æque dicendum est de reliquis vegetalium ibi repertis.[1]

Quoad tempus præhistoricum. Exuviæ fossiles a geologis detectæ et diligentissime examinatæ vel omnino congruunt cum plantis et animalibus, quæ adhuc perdurant, vel (si agitur de speciebus jam extinctis) commonstrant

« None of the created «new species» of plant or animal I know of-would last five years in the open, nor is there the slightest evidence that any new species of field or forest or ocean ever originated from mutation, discontinuous variation, or hybridization », *Science,* Oct. 20, 1922 — **(Barry-O'Toole,** *op. cit.,* p. 28).

[1] The men of science who accompanied the French armies during their four years' occupation of Egypt, from 1797 to 1801, instead of employing their whole time, as so many preceding investigators had done, in exclusively collecting human mummies, had examined diligently and sent home great numbers of embalmed bodies of consecrated animals, such as the bull, the dog, the cat, the ape, the ichneumon, the crocodile, and the ibis. . . Now, such was the conformity, says Cuvier, of the whole of these species and races to those now living, that there was no more difference then than between the human mummies and the embalmed bodies of men of the present day. Yet some of these animals have since that period been transported by man to almost every variety of climate, and forced to accommodate their habits to new circumstances as far as their nature would permit. The cat, for example, has been carried over the whole earth, and within the last three centuries, has been naturalised in every part of the New World, . . . yet it has scarcely undergone any perceptible mutation, and is still the same animal which was held sacred by the Egyptians. Of the ox, undoubtedly there are many very different races; but the bull Apis, which was led in solemn procession by the Egyptian priests, did not differ from some of those now living.

Nor was the evidence derived from the Egyptian monuments confined to the animal kingdom: the fruits, seeds, and other portions of twenty different plants, were faithfully preserved in the same manner; and among these the common wheat was procured by Delille, from closed vessels in the sepulchres of the Kings, the grains of which retained not only their form, but even their colour. . . . No difference could be detected between this wheat and that which now grows in the East and elsewhere, and similar identifi-

characteres bene determinatos, sed ne minimum quidem exhibent vestigium formarum intermediarum, quæ, admisso evolutionismo, fere innumeræ debent esse inter diversas species.[1]

209. **Objiciunt** 1°. In omnibus organismis manifestatur typus communis, qui commode explicari nequit nisi per

cations were made in regard to many other plants (**Lyell**, *Principles of Geology*, v. ii., p. 265, ed. 12).

[1] Cuvier's question to Lamark, Darwin's predecessor, has never been satisfactorily answered: « If all species are transmitted by almost imperceptible gradations from other anterior species, how is it that innumerable transitional forms do not everywhere abound? » — (**Hettinger**, *Nat. Religion*, p. 138).

There is not the least evidence to prove that a form, in the slighest degree transitional between any two of the groups, either exists or has existed during the period of the earth's history, which is recorded by the geologist—(**Huxley**, *Study of Zoology*, p. 103).

Transformation is not proved by facts, and even its warmest partisans confess that up to this they have not been able to find a single intermediate species. Périer, despite his favourable tendencies to Darwinism, says in his treatise on Physiology (1882): « We have no incontestable proof that this transformation (of races into species) has ever been effected ». He brings forward the facts and observations on which the Darwinists sought to establish their system, but, he continues, « there is yet no material proof that the distance which separates the species from the race has ever been bridged over ». At the same time another renowned transformist, M. Contejean, published an article in which he demolished successively all the alleged positive proofs in favour of transformation, and he frankly avowed that he only adhered to that system *in order to avoid the doctrine of creation*— (**Slevin**, *op. cit.*, p. 173).

Since the publication of Darwin's *Origin of Species*, naturalists have been exploring every portion of the globe for some trace of the missing link between man and the highest known mammal, a link which they say exists somewhere, if the hypothesis of the evolution of man be true. Explorations have been made in the dark forests of equatorial Africa, in the dense jungles of southern Asia, in the less frequented islands of every sea. . . in the tombs and burial-places of prehistoric man; but all to no purpose. Ita **Zahm** (*Evolution and Dogma*, p. 351), qui nihilominus sic pergit: « But, granting that the search for the link connecting man with the ape has been so far futile; admitting, with Virchow, that the future discovery of this *proanthropos* is highly improbable, may we not, nevertheless, believe as a matter of theory, that there has been such a link, and that corporally man is genetically descended from some species of ape or monkey? ». Hanc theoriam *Zahm* postea ut falsam rejecit.

Palæontology can assert nothing whatever of a development of

theoriam descendentiæ omnium organismorum ab eodem organismo primitivo.

Resp. Manifestatur typus, qui commode et recte explicatur ex eo, quod juxta eumdem typum genericum simul cum maxima diversitate omnes organismorum species produxit sapientissimus Creator, qui sic ad universi pulchritudinem unitatem ac varietatem mirifice sociavit. Unde, conformitas typi non est tribuenda *unitati originis* per evolutionem, sed *unitati ideæ exemplaris* in mente Creatoris.[1]

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the body of man from the animal — (**Muckermann**, *Cath. Encycl.*, v. v., p. 666).

[1] The groups and sub-groups of the plant and animal world are built up according to the same fundamental plan of organization. This important fact, on which all classification rests, is said to be explained by the hypothesis that the different groups *(e.g.,* the vertebrates) have been evolved from forms possessing the peculiarities of the type, while the differences are said to have been brought about by modifications *(e.g.,* adaptation to the environment). The original form or type is imagined to be as primitive as possible, while its modification is said to mark progress, so that those organisms which have the simplest structure are said to correspond to the most ancient forms, the more perfect specialized forms being the most recent.

Are these conclusions well founded? The plain facts are these: *(a)* Groups of organisms exhibit similar fundamental forms, which, however, *(b)* show various differences, so that *(c)* the groups fall into similar divisions with a more or less perfect degree of organization. In the first place, it is difficult to understand why the lower organized forms should be historically the older. According to the evidence furnished by palæontology, this is in many instances positively false, and in no case is it demonstrable, while philosophically it is only possible in as far as the simple forms actually possess the peculiarities of their descendants, at least in some latent condition. Secondly, it is hard to see why similarity of structure should prove common origin. As a matter of fact, palæontology knows nothing of common primeval forms; on the contrary, it points to parallel series whose origins are unknown. It is not improbable, moreover, that resemblances of structure and function in nature frequently represent instances of convergence, through which widely different organisms assume similar modifications of form under similar conditions of life. . . The similarity which exists between whales and fishes can be considered merely as an instance of convergence, and no one will assert that the whale has developed from the fish merely because it happens to be provided with fins. As a matter of fact, there are numberless analogies which no

2°. In organismis superioribus inveniuntur organa «rudimentaria», quæ jam amplius nullum habent usum (*v.g.*, in homine musculi ad aures movendas); hæc vero rationabilem accipiunt explicationem ab evolutionistis, qui dicunt ea esse reliquias organorum, quæ plene evoluta existebant in speciebus inferioribus, unde superiores descenderunt.

Resp. Nimis confidenter hæc organa asseruntur nullum habere usum; potius dicendum est eorum usum, sicut plurium aliarum rerum diu incognitum, adhuc nos latere. — Ea revera esse utilia progressus scientiæ fortasse monstrabit.[1] Deinde «ponunt adversarii omnium rerum et dispositionum vim in usu physiologico esse positam, ita ut nihil in organismo reperiatur, quod ad ipsas vitæ operationes peragendas destinatum non sit aut non fuerit. Quo quidem loco haud levi detinentur errore. Natura enim non soli utilitati, sed etiam venustati et harmoniæ studet. Unde, mirum non est multa inveniri in variis viventium ordinibus, quæ ad augendam harmoniam et conformitatem, non ad vitæ usum et commoditatem destinata sint» (Pesch, *Phil. Nat.*, v. ii., p. 321).

serious student would ever dream of reducing to a common origin. . . . Finally, the chief problem which refers to teleology of adaptive modifications is not even touched by the doctrine of descent from common ancestors — (**Muckermann**, *ib.*).

[1] We must bear in mind that it has been a common mistake to describe as « rudimentary » any organs of which the use was unknown. Especially in the case of the human body, it has repeatedly happened that organs described as rudimentary have been found to fulfil some definite function of biological importance. I may remind you of the thyroid gland, the thymus gland, and the pineal gland. With regard to the last, Cynon proved that it was important for the maintenance of equilibrium. But there undoubtedly are certain rudimentary organs for which we cannot account in such a fashion. As such, up to the present time, we reckon the *processus vermiformis*, which so often causes appendicitis — (**Wasmann**, *Problems of Evolution*, p. 64).

Darwin erred in denying the utility of the vermiform appendix. For, although this organ does not discharge in man the important function which its homologue discharges in grain-eating birds and also in herbivorous animals, it subserves the secondary function of lubricating the intestines by means of a secretion from its muciparous glands — (**Barry-O'Toole**, p. 296).

3°. Organismi inveniuntur, qui habent characteres specierum distinctarum (*v.g.*, *ornithorynchus* et *archæopteryx*); *atqui* hi organismi sunt species transitionis, quum partes non-mutatas cum partibus mutatis conjungant.

Resp. Ad speciem transitionis non sufficiunt characteres specierum distinctarum simul conjuncti, qui in suis lineamentis fixitatem ostendunt, sed insuper requiruntur successivæ viventium generationes, quæ in minutissimis quibusdam determinationibus differrent et quemdam transitum inter varias species exhiberent. Exempla allata constituunt species proprias et ab aliis plane diversas; id quod naturalistæ concedunt.[1] «Certum est a geologis species detectas esse ac detectum iri, quæ sint intermediæ « secundum quid » quatenus tamquam species in se absolutæ suoque modo perfectæ et quasi solidatæ inter species remotiores interjacent, quas sæpissime comprobatum est extitisse simul cum illis formis inter quas media esse putantur. Numquam autem repertæ sunt species, quæ sint intermediæ «simpliciter», *i.e.*, formæ transitoriæ, quæ dent quasi transitum conjungantque hoc modo species remotiores» (**Pesch**, *Psych.*, v.i., p. 226).

210. Sunt qui evolutionismum aliquarum specierum *per saltus*, ut aiunt, admittendum esse autument, ita nimirum ut non ex circumstantiis externis et gradatim, sed per legem rebus a Deo inditam, circumstantiis faventibus, quædam viventia ad alias species transierint et transeant. Ita *Mivart, de Vries, Wasmann*.[2] Sed præterquam

[1] In the slate of Solenhofen a fine example was met with in 1862 of the skeleton of a bird almost entire, and retaining its feathers so perfect that the vanes as well as the shaft are preserved. . . This valuable specimen is now in the British Museum, and has been called by Prof. Owen *Archæopteryx Macrura*. Although *anatomists agree that it is a true bird*, yet they also find that in the length of the bones of the tail, and some other minor points of its anatomy, it approaches more nearly to reptiles than any known living bird — (**Lyell**, *Elements of Geology*, p. 314).

[2] Recent science suggests that the theory of gradual evolution may be supplanted by that of saltation or mutation. According to this view a new organism considerably different from the parental type is from time to time suddenly originated by unknown causes, and perpetuates itself as a new species. If adopted merely

quod nulla est de hac re apud ejus auctores consensio, nec exempla, quæ proferunt, videntur esse nisi varietates constantes, seu species systematicæ, non vero naturales, theoria contrait ordini naturali, cujus est (inquit S. Th., 1. q. 119. a. 2), «ut aliquid gradatim de potentia reducatur in actum; et ideo in his, quæ generantur, invenimus quod primo unumquodque est imperfectum et postea perficitur».

211. Schol. — Quæri potest, utrum evolutionismus Fidei divinæ adversetur. Systema rigidum ei esse adversum eo constat, quod Dei existentiam vel saltem ejus interventum ac providentiam in specierum productione infitiatur.

De evolutionismo mitigato controvertitur. Sunt enim, qui in hoc systemate, dummodo non extendatur ad speciem humanam, plenam conformitatem cum narratione Mosaica se videre profiteantur; alii vero, ut ***Lamy*** (Comment. in Gen., v. i., p. 119), ***Urráburu,*** qui plures citat, arbitrantur hac ipsa narratione tale systema satis efficaciter excludi (***Psych.***, v. i., pp. 530-45). Adhuc ægrius cum S. Scriptura componitur sententia nonnullorum, qui docent corpus primi hominis evolutione prodiisse, vel illud fuisse corpus alicujus bruti (v.g., ***simii),*** quod Deus aliquantulum mutavit et anima rationali informavit. «Omnes (theologi), quantum ego sciam (ait **Urráburru**, ***ib.***, p. 442) arbitrantur tenendum omnino esse quod corpus humanum a Deo immediate fuit formatum. Plures etiam putant hanc esse doctrinam catholicam, vel fide certam, ut, v.g., ***Suarez, Valentia,*** et inter recentiores ***Perrone, Katschthaler, Jungmann*** et ***Mazzella:*** alii vero abstinent ab omni censura, creationem hominis a Deo immediate factam ex theologicis fontibus probantes, exclusa omni angelorum vel aliarum naturalium causarum cooperatione. Si quid igitur valet unanimis theologorum consensus (valet autem omnino ad moralem gignendam in animis certitudinem), ille solus sufficiat ad transformistarum commenta explodenda atque ad belluinam hominis originem repudiandam. Hæc itaque argumenta,[1] quæ singillatim sumpta gravissima videntur, conjuncta tantum pondus habent, ut nefas sit doctrinam Ecclesiæ in dubium revoca-

as a working hypothesis to account for the common origin of the bodily part of man and the lower animals, this might possibly lessen some of the difficulties, even from the purely rational standpoint. Some special intervention or supernormal causation would have been required in any case to produce an organism with brain and nervous system fitted for the reception of the rational soul. — (**Windle,** ***The Church and Science,*** p. 385).

[1] Quæ, scilicet, ex S. Litteris, Patrum testimonio, R. Pontificum

re, nedum eidem refragari, firmissimeque tenendum sit humanum corpus a solo Deo immediate formatum ex pulvere vel luto fuisse».

Doctrina hæc non est quidem *de fide definita,* neque *de fide catholica,* i.e., non est ab Ecclesia solemni judicio aut ordinario magisterio proposita tamquam divinitus revelata, verum videtur esse *de fide divina* seu clare contenta in deposito fidei (Ita fere **Lahousse**, *De Deo Creante,* p. 141).

«Adamum quoad corpus immediate a Deo ex limo terræ conditum fuisse videtur esse de fide» (**Tepe**, *Inst. Theol.*, v. ii., p. 471).

« Admitti non potest doctrina transformistarum, non solum eorum, qui volunt totum hominem secundum corpus et animam paulatim sese evolvisse ex brutis animalibus, sed etiam eorum, qui volunt corpus hominis jugi progressu alicujus speciei animalis paulatim formatum esse et dein a Deo animam rationalem infusam accepisse» (**Chr. Pesch**, *Præl. Dogm.* v. iii., p. 49).

Commissio Biblica (30 Junii, 1909) declaravit «peculiarem creationem hominis» in dubium vocari non posse.[1]

PSYCHOLOGIÆ PARS SECUNDA.

De Vita Sensitiva.

212. Vita animalis seu sensitiva vegetativam præsupponit eique superstruitur. Varia autem sunt discrimina quibus entia sensitiva ab entibus vegetativis differunt. Et sane, — *(a)* in animali elementa coalescunt juxta combinationes quaternarias, in vegetali juxta combinationes ternarias;[2] *(b)* animal ita exstructum est, ut vita vegeta-

Conciliorumque definitionibus, ac theologorum consensu ipse adducit.

[1] « Si quis hanc quæstionem *secundum sola principia scientiarum naturalium* velit inspicere, hoc saltem concedere debet cum Guibert *(Les Origines,* 1923, p. 406), quod opinio eorum, qui admittunt corpus hominis immediate provenire a Deo, meliora fundamenta scientifica habet quam doctrina contraria. Et dico saltem hoc concedendum esse; quia si argumenta utriusque partis serio inspiciantur, non apparet quomodo ulla solida probabilitas rationibus transformistarum tribui possit» — (**Huarte**, *De Deo Creante,* p. 168).

[2] There is, commonly, a marked difference in general chemical composition between vegetables and animals, even in their lowest forms; for while the former consist mainly of *cellulose,* a substance closely allied to starch and containing carbon, hydrogen, and oxygen only; the latter are composed in great part of the three elements just named, together with a fourth, nitrogen; the chief proximate principles formed from these being identical, or nearly

tiva non solum subordinetur vitæ sensitivæ, sed ex ejus unione cum sensitiva evadat perfectior et nobilior; nam convertit alimentum in carnem, ossa, nervos, etc., atque organismum idoneum ad sentiendum producit ac conservat; *(c)* animal alitur ex regno vegetali et animali, non autem ex regno minerali; planta e contra potissimum ex substantiis anorganicis nutrimentum trahit.

Differentia tamen essentialis, qua animalia a vegetalibus distinguuntur, et ex qua ceteræ differentiæ oriuntur, est **sensibilitas** seu *vis percipiendi in concreto res corporeas et ob hanc perceptionem easdem appetendi*. Liquet autem objecti perceptionem nullam esse, nisi sentiens illud experiatur.[1]

Licet operationes et facultates vitæ sensitivæ sint brutis et hominibus communes, tamen, quum præcipue ope conscientiæ intimam earum naturam cognoscamus, oportet, dum eas in duobus hujus *Partis* capitibus examini subjicimus, hominem præ oculis habere.

CAPUT PRIMUM.

De Cognitione Sensitiva.

213. Nomine sensus generice accepti intelligitur tota collectio facultatum, quæ ad repræsentandas sensibiles qualitates rerum materialium ordinantur; operationes

so, with *albumen*. It must not be supposed, however, that either of these typical compounds alone, with its allies, is confined to one kingdom of nature — (**Baker**, *Kirkes' Handbook of Physiology*, p. 4).

[1] There are many differences between plants and animals. The main difference, however, consists in the absence or the presence of consciousness. Animals, at least the higher forms of animals, give unmistakable signs of consciousness. They have sense organs, and respond to stimuli in the same way as man. By analogy, we know that they experience sensations, they have imagination, memory, feeling, instinct. Otherwise their behaviour is inexplicable. Plants, on the contrary, give no sign of consciousness. They have no nervous system, with which consciousness is always connected in animals, and there is no reason whatsoever to attribute to them what they do not manifest. Sometimes, it is true, the scientist may not be certain whether a living being (especially among microbes) is a plant or an animal, but this can in no way be given as an objection against the distinction of both kingdoms. The degrees of

autem, quibus diversæ facultates sensitivæ sua objecta repræsentant, nomen accipiunt *sensationis* vel *cognitionis sensitivæ*.[1]

Primo in hoc capite veniunt solvendæ quæstiones de modo, quo oriatur cognitio sensitiva, de principio unde procedat, ac de organo in quo exerceatur. Deinde in altero et tertio articulo agetur de sensibus externis et internis.

ART. I.

DE ORTU, PRINCIPIO, AC SEDE COGNITIONIS SENSITIVÆ.

§ 1. De Ortu Cognitionis Sensitivæ.

214. **Cognitio sensitiva** est *repræsentatio vitalis objecti materialis per sensum effecta.*

Dicitur 1°. *repræsentatio,* ut operatio sensitiva distinguatur *(a)* ab operatione vegetativa, quæ objectum suum non repræsentat, sed transformat sibique assimilat; *(b)* et a physico organismi motu ab objecto proveniente; sensatio enim est actio perceptiva, quæ hunc motum subsequitur.

Dicitur 2°. *vitalis,* ut hæc repræsentatio distinguatur a repræsentatione *physica,* quæ actione transeunte in re aliena producitur; sensatio autem est actio immanens, qua sentiens aliquid in se accipit et seipsum perficit.

Dicitur 3°. *objecti* **materialis,** ut proprium objectum sensationis indicetur.

Dicitur 4°. *per* **sensum** *effecta,* quia non per animam solam, sed per compositum efficitur cognitio sensitiva, ut in Thesi XXVI. probabitur.

consciousness vary greatly in animals, but the question may always be asked, if not answered: Is consciousness present? Then we have an animal. Is consciousness absent? Then we have a plant — (**Dubray**, *Intro. Phil.*, p. 435).

[1] Rosmini tient absolument à réserver la ***connaissance*** pour la faculté intellectuelle capable de saisir l'être des choses: selon lui, l'animal sent, mais ne connaît pas. Nous croyons que cette réserve est absolument arbitraire: elle est incontestablement en désaccord avec le sens commun et le langage universel. Le petit poussin connaît sa mère, le chien connaît son maître, etc.; il n'y a personne qui ne traduise en ces termes de *connaissance* les mœurs des animaux — (**Mercier**, *Psych.*, v. i., p. 136).

Cognitio sensitiva duo involvit elementa, unum *passivum*, quod est *impressio* speciei sensibilis; alterum *activum*, quod est ejusdem speciei *expressio*, seu, ipsa objecti cognitio.[1]

215. **Species sensibilis impressa.** Actus sensitivæ cognitionis, quum sit immanens, exerceri nequit, nisi objectum sit aliquo modo in facultate cognoscente. Experientia namque constat facultatem sensitivam tunc solum in actum cognitionis transire, quando aliquod objectum afficit organum sensus, ibique aliquam immutationem producit. Hæc immutatio in organo, ab objecto producta, est mere physica et effici potest in organo cadaveris; unde in ea non consistit sensatio; nec ipsa constituit speciem impressam, cujus præsentia est proxima et necessaria cognitionis conditio. Mediante vero prædicta immutatione in organo, oritur in ipsa facultate quædam dispositio, qua facultas redditur apta ad percipiendum objectum seu ad producendum in seipsa objecti similitudinem. Hæc similitudo dicitur *species sensibilis* impressa, et definitur: *qualitas repræsentativa ab objecto sensibili in facultate organica producta, ut eam compleat ad cognitionem objecti eliciendam.*

Species impressa dicitur *(a) qualitas*, quia est facultatis modificatio; *(b) repræsentativa*, quia suo modo exhibet objectum ejusque vices gerit respectu mentis; *(c) ab objecto sensibili producta*, quia prodire nequit ex innata virtute facultatis; *(d) in facultate organica*, quia ibi debet esse, ubi peragitur sensatio; *(e) ut eam compleat*, etc., quia facultatem, ex se indifferentem quoad diversa cognoscibi-

[1] In sensation the sentient subject is both passive and active: first *passive*, in so far as it receives an impression; then *active*, in so far as it reacts to the impression received. The natural result of this activity is to bring the subject into some sort of contact with something other than itself, something that is brought up against it, an *object* (from *objicere*), something that is objective, as distinct from the merely subjective.

If the *passive* side of the sensation predominates, it is often called *feeling*, or simply sensation (a sensation of cold, a feeling of discomfort). If it is the *active* element that is in prominence, then the sensation goes by the name of *cognition* or *perception (sense* or *sensuous experience)* — (Mercier, *Manual of Modern Schol. Phil.*, v. i., p. 187).

lia, proxime disponit ad objectum determinatum cognoscendum.

216. **Species sensibilis expressa.** Etsi facultas sensitiva, ut cognoscat, indiget ab objecto moveri, tamen, quum sit facultas vitalis *(i.e.,* seipsam movens), ejus cognitio nequit consistere in passiva receptione speciei sensibilis, sed in actione, quam exserit simul ac specie sensibili informatur. Quare, facultas apte disposita producit in seipsa actum immanentem sensationis, quo nimirum se constituit objecto conformem illudque cognoscit. Similitudo sic producta est ipsa cognitio et dicitur *species* **expressa**, quæ definitur: *similitudo objecti, quam facultas sensibilis in se exprimit ob impressionem extrinsecus immissam.*[1]

217. **Consectaria.** 1°. « Unde, cognitio sensilis potest vero aliquo sensu dici *species sensibilis expressa*, quia est

[1] As the schoolmen held the human mind to be capable of two essentially distinct kinds of cognition, sensuous and intellectual, they termed the apprehensive acts of the former *species sensibiles*, of the latter *species intelligibiles vel intellectuales*. In the genesis of the *species* they distinguished two moments or stages. The modification of the sensuous faculty, viewed as an impression wrought in the mind by the action of the object, was named the *species impressa*. The reaction of the mind as an act of cognitive consciousness was styled the *species expressa*. The latter form designated the sensation considered as a complete and perfect act of consciousness elicited by the soul; the former indicated the earlier stage of the process, the alteration of the condition in the mind looked at as an effect of the action of the object. . . The term *species corporalis* was sometimes used to signify the physical impression or movement produced by the object in the organism, but the strict meaning of the word *species*, and the only meaning of the term *species intentionalis*, was the mental state. Thus, neither the image of the object depicted on the retina of the eye, nor the nervous disturbance propagated thence to the brain, but the *conscious act* finally awakened was held to be the true *species* or *species intentionalis*.

Rejecting the interpretation of the *species* as roving images, and every theory conceiving them as representations mediating between the object and the cognitive faculty, the thought embodied in the doctrine is perfectly sound. Unless we are prepared to maintain that our soul is born with all its future knowledge ready made, and wrapped up in innate ideas, we must allow that the physical world does somehow or other act on our faculties, and that our perceptions are due to the influence of material objects upon us. The mind does not determine its own modifications, and

conformitas intentionalis cum objecto a sensu, postquam ipse objecto *inchoative* intentionaliter conformatus est, in se vi hujus inchoativæ conformitatis *efformata*. Quare, Suarez bene dicit speciem ab objecto in sensu receptam a cognitione distinguendam esse ut imaginem intentionalem *causalem (virtualem)* ab imagine intentionali *formali*» (**Boedder**, *Psych.*, n. 72, ed. 3ª).

Obs. Sunt qui dicant speciem expressam non inveniri nisi in *cognitione intellectiva abstractiva*, haud igitur in *cognitione sensitiva*. Alii vero docent eam esse elementum necessarium omnis cognitionis sive intellectivæ sive sensitivæ, eamque esse actum cognitionis objective et repræsentative spectatum, seu, ipsum cognitionis actum in *facto esse*, vel etiam actum qua repræsentativum.

2°. «Cognoscentia a non cognoscentibus in hoc distinguuntur, quia non cognoscentia nihil habent nisi formam suam tantum, sed cognoscens natum est habere formam etiam alterius. Nam species cogniti est in cognoscente. Unde, manifestum est quod natura non cognoscentis est magis coarctata et limitata. Natura autem rerum cognoscentium habet majorem amplitudinem et extensionem. Propter quod dicit Philosophus, quod anima est quodammodo omnia» (**S. Th.**, 1. q. 14, a. 1).[1]

3°. Species sensibiles non sunt ejusdem naturæ ac objecta, quæ repræsentant. Visus, *v.g.*, non efficit in se colorem materialem, sed quamdam imaginem coloris repræsentativam.[2]

the strongest volition is unable to make the deaf man hear a word, or the blind man see a colour. But this is to admit that the faculty is stirred into conscious life and informed by dispositions wrought in it by the perceived object — (**Maher**, *Psych.*, p. 53).

[1] Sensation! With this word alone we pass an immense gap in the scale of beings. What is the non-sensible compared with the sensible? The insensible is, but experiences not that it is; there is nothing in it but itself: the sensible experiences that it is; and there is in it something besides itself, all that it feels, all that is represented in it. The insensible, although surrounded with beings, is in complete isolation — in solitude: the sensible, although alone, may be in a world of infinitely varied representations — (**Balmes**, *Fund. Phil.*, v. i., p. 253).

[2] Knowledge is more than a mere resemblance; it is an *image*, that is, a resemblance which is an imitation, a reproduction of the

4°. Magnopere errant materialistæ, qui sensationem reponunt in quadam nervorum actione et cerebri reactione vel ejusdem secretione. Eo enim quod impressiones, extrinsecus acceptæ in organo sensus, transferuntur ope nervi sensitivi usque ad cerebrum, ibique determinant motus moleculares et reactiones, in his motibus reponendum esse phænomenon sensationis existimant.[1] At ex his factis id tantum logice inferri potest motum et modificationes prædictas esse conditiones sensationis. Aliud enim est sensationem non fieri sine quodam motu nervorum et cerebri, aliud vero sensationem in motu consistere. Qui hæc confundunt in fallaciam *non causæ pro causa* impingunt.[2] Nec valet tribuere actum sentiendi viribus phy-

thing according to the nature of the knowing subject. The image, however is not a *material, physical* image, like that of a photograph, but an image of another kind, which is called *psychical, ideal, mental*, or sometimes in scholastic language *intentional*. But these are only so many words that must speak for themselves; their positive signification cannot be defined; they amount simply to saying that this image is *other* than a physical one, in a word, that it is knowledge — (**Mercier,** *Manual,* v. i., p. 188).

[1] We can examine the movements and material changes that take place in the organs of even those lowest animals whose psychic activity is bounded by the feelings of pleasure and plain: but the sun of science cannot throw a single ray of light on the action of sensation. Feeling cannot be explained or derived from movement. Sensation and spontaneity cannot be kneaded into the purely mechanical action of atoms; their two natures are so widely different. It is as difficult to account for psychical phenomena by chemical forces as it is to convert them into heat or electricity. Only the giddy fancy of a giddy spirit can describe them as a secretion in the brain similar to the secretion of the nerves. In the one case the effect is physical, and in the other metaphysical... Science will ever be at a loss to understand how it is that a few atoms of carbon, hydrogen, and nitrogen are not perfectly indifferent to the mode or place in which they lie or move. How can their fusion beget sensation? The answer is by no means self-evident -- (**Schanz,** *A Christian Apology,* v. i., p. 192).

[2] Life is not due to mere material combinations, nor is mind explained by organization. Facts of consciousness are related to the brain and to bodily states; but the brain is not their cause. « The chasm is never bridged over between the last state of the material elements within our reach and the first rise of sensation; and scarce anyone will cherish the vain hope that at a higher stage of development science will find a mysterious bridge in a case

sicis chimicisque materiæ inter se temperatis, quia hæ vires, quum transeunter agant et attingant corpora ut in concreto existunt, nequeunt esse principium quod in seipso corpora intentionaliter repræsentat; unus enim et alter modus agendi sunt toto genere diversi. Denique, si sensatio in quovis genere motus localis consisteret, actiones animalium sæpe ordinatissimæ et ingeniosissimæ per solas leges mechanicas explicandæ essent, quod sane est prorsus absurdum.[1]

§ 2. De Principio Sensationis.

218. THESIS XXIV. — Principium eliciens cognitionem sensitivam non est anima sola, sed compositum anima et corpore constans seu corpus animatum.

Stat. Quæst. Error errori materialistarum e regione oppositus, est istorum, qui docent sensationem esse operationem animæ solius, corpus vero non concurrere active seu efficienter ad sensationem, sed tantum per modum conditionis præviæ, quatenus nimirum modificationes, quas corpora externa in organismo efficiunt, anima observat seu cognoscit.

In hac sententia sensatio non est in seipsa organica et materialis, sed inorganica et spiritualis, quum in ejus productione corpus non influat efficienter. Eo sensu tamen est organica, quod anima eam exercere nequeat, nisi motu organorum excitata fuerit. Ita docent omnes, qui (ut *Cartesius, Leibnitz, Rosmini)* circa substantialem uni-

where it is the impossibility of any sure crossing over that forces itself on us with the most evident distinctness » (Lotze)— (Driscoll. *The Soul,* p. 66).

[1] There is plenty of physics and chemistry and mechanics about every vital action, but for a complete understanding of it something beyond physics and chemistry is needed. And life introduces an incalculable element. The vagaries of a fire or a cyclone could all be predicted by Laplace's calculator, given the initial positions, velocities, and the laws of acceleration of the molecules; but no mathematician could calculate the orbit of a common housefly. . . I will risk the assertion that life introduces something incalculable and purposeful amid the laws of physics: it thus distinctly supplements those laws, though it leaves them otherwise precisely as they were and obeys them — (Lodge. *Presidential Address,* British Association, 1913).

onem animæ et corporis errant, quum enim non admittant corpus et animam in unam substantiam conjungi, nec sensationem ut actum compositi admittere possunt.

Vera doctrina est scholasticorum docentium corpus et animam (*i.e.*, compositum animatum) esse adæquatum principium sensationem eliciens, licet anima sola sit principium formale et radicale; omnis namque virtus, quæ composito competit, ab anima provenit; qua ex causa potentiæ etiam inferiores dicuntur potentiæ *animæ*.

219. **Prob. Thesis.** PARS 1ª. *(. . . non est anima sola).* **Arg. I.**—Si anima sola sentit, ipsa per impressiones a corpore acceptas objecta externa percipit; *atqui* id fieri nequit. Nam *(a)* corpus, utpote extensum, nequit agere in animam; actio enim corporis fit per applicationem sui partium ad partes patientis; anima autem est simplex; *(b)* admissa actione corporis in animam, hæc perciperet nervorum vibrationes, objectum vero, a quo nervi excitantur, non aliter perciperet quam concludendo tales vibrationes aliquam habere causam; *atqui* aliud est objecti existentiam ratiocinando inferre, aliud ipsum objectum in se videre, audire, tangere, etc.; *ergo*.

II.—Ideo sensatio tribuitur animæ tamquam ejus causæ adæquatæ, quia nulla proportio existere videtur inter sensitivam operationem et materiam; *atqui (a)* ob eamdem rationem operationes vegetativæ anima sola effici dicendæ sunt, quum hæ operationes sint vitales, et ideo perfectionem materiæ excedant; *(b)* talis ratio nihil valet, quia materia non proponitur ut totum principium sensationis, nec ut principium sua virtute operans, sed ut principium partiale, quod cum anima et virtute ab anima derivata constituit adæquatum sensationis principium; *ergo*.

220. PARS 2ª. *(. . . est corpus animatum).* **Arg. I.**—Aut materia sola, aut anima sola, aut compositum ex utraque, est principium cognitionem sensitivam eliciens; *atqui* non materia sola, quia hæc non est principium activum, non anima sola, ut patet ex dictis; *ergo* compositum animatum.

II.—Conscientia teste, sensationes nostræ sunt forma-

liter extensæ; qui enim manum suam ad lapidem applicat, sensationem frigoris in tota manu existere persentit, ita ut sensatio non solum repræsentet objectum extensum, sed ipsamet extensa evadat.[1] Jamvero, sensatio, quum sit operatio immanens, recipitur in principio, a quo elicitur; *atqui* in casu nostro recipitur (sentitur) in composito; *ergo* a composito elicitur.

III. Cognitio sensitiva requirit principium extensum; nam objectum sensationis, quum sit extensum, nequit concrete repræsentari nisi in subjecto extenso; simul vero requirit principium simplex, quod omnes partes objecti una sensatione exhibeat. Si enim potentia sensitiva esset

[1] It is a fact of consciousness, evident upon careful observation, that sensation itself is quantitative. The properties of quantity are: that it occupies space, i. e., *extension;* that it can be measured, i. e., *intensity;* that it is produced gradually, i. e., *protensive magnitude*. All these properties are verified of the sensation. *(a)* Consciousness testifies that sensation has an extended form. Not only the object felt is something extended, but the very feeling is extended also. Thus, in the sensation of sight, the organ is a certain extended part of the body, the impression made upon the eye is extended, as experiment shows, the sensation is also extended. In like manner the same can be said of the other senses. The sense of touch, however, presents the most striking illustration of this truth. The pain, ex. gr., which is caused by the needle piercing the flesh is definitely localized and circumscribed: again, I hold a coin in my fingers, a limited surface of the skin feels the impresssion: or I lift my hand to ease the racking headache which may be now in the temples, now on the side, or the back of the head; or I can indicate the definite tooth that is to be extracted. Not only can the pain in the peripheral organ be localized, but physiology has traced the nerves which communicate the stimulus and have located the nerve centres in the brain. Therefore, in the act of sensation the subject feeling, the manner of feeling, and the object felt are all extended.

(b) Sensation can be gradually produced; hence a certain time may elapse in the production, which has been called *protensive magnitude*. Consciousness testifies that the sensation may be gradually produced, e. g., from the thumb, to the hand, to the whole arm.

(c) Individual experience testifies that sensations differ in intensity. Thus, ex. gr., we distinguish a difference of intensity between the candle and the electric light. Now an attempt has been made to measure these differences. Hence the department of psycho-physics — (**Driscoll**, *The Soul*, p. 197).

extensa absque principio simplici, aut singulæ ejus partes singulas partes objecti cognoscerent, aut unaquæque pars totum objectum cognosceret; *atqui* si primum, vix umquam totum objectum sensibus cognosceremus;[1] si alterum, unum objectum pluries multiplicatum sentiremus. Jamvero, principium ex una parte simplex, et ex altera parte extensum non est aliud quam corpus animatum; *ergo*.

221. **Cor. 1.**—Ergo corpus non est sensu proprio instrumentum respectu animæ *ut sensitivæ;* anima enim non movet corpus ad agendum, sed ipsa et corpus concurrunt ut totum principium operationum. Anima quidem est activum principium sensationis, at incompletum, et nonnisi ex ejus unione cum corpore fit apta ad sentiendum. Quia autem quidquid confert ad agens complendum, sensu latiori vocatur instrumentum, corpus dici solet instrumentum animæ in actu sensationis eliciendo. Magis proprie dici potest corpus instrumentum respectu animæ *ut rationalis;* hæc enim est intrinsece independens a corpore, et potest pro lubitu ejusdem membra ad operandum applicare.

Cor. 2.—Ergo in anima a corpore separata naturaliter desinit omnis operatio sensitiva, quia anima post separa-

[1] Let us suppose that an impression being made upon a group of nervous cells, each of them enters into the impressed conditions and feels the impression made upon it. To be sure we do not know any too well just where impression becomes sensation, but suppose the case to be as just stated, each cell can feel only the impression made upon itself and can know nothing of the impressions made upon its neighbours. It is as if each member of an audience in a concert hall heard one note of the music. The air indeed has been rendered, but who has heard it? Again, we may suppose that each cell of the retina can see what is in the ray of light falling upon it and can see no more. The landscape is there; but who sees it? It does not help ut to say that the nervous system can concentrate the impressed condition of many cells upon a smaller number, for even if we could bring all the nerves to a single cell, yet that cell, being extended, has parts, and each part can perceive at most only the impression made upon itself. Thus we must insist that there is a non-extended element, which, governed by other laws than those of matter, receives, as a whole, the impression on the sensory apparatus — (**Dwight**, *op. cit.*, p. 137).

tionem non retinet formalem, sed tantum radicalem, sentiendi potentiam. Controvertitur inter theologos (ubi de pœna gehennali), num divinitus anima separata sentire possit. Alii affirmant, quia in hac vita anima in sua entitate recipit actionem sensitivam, quam cum organo exercet; in anima autem separata Deus potest supplere influxum organi (sicut intellectui superaddit vim, qua ista facultas fit apta ad Deum intuendum), quo influxu suppleto, anima separata sentit actionem corporum (cf. *Lessius,* Perf. div., lib. 13, c. 30, n. 216). Alii negant sensationem proprie dictam ab anima separata haberi posse (cf. S. *Th.,* Q. Disp. xi. q. 26, a. 1; S. Theol., Suppl., q. 70, a. 3; *Vonier,* The Human Soul, c. 33, *Spirit-Penalty).*

§ 3. De Sede Sensationis Externæ.

222. THESIS XXV.—Sensatio non in cerebro, sed in propriis cujusque sensus organis efficitur.

Stat. Quæst. Facultates sensitivas esse organicas constat ex thesi præcedente. Hic autem quæritur in quibusnam organis peragatur sensatio. Cartesius suique, censentes animam esse in cerebro tamquam in sua propria sede, in cerebro elici actum sensationis existimant. Huic sententiæ hodierni physiologi communiter subscribunt, contendentes organa externa non alii fini inservire quam impressiones recipere easque per nervos sensitivos ad cerebrum deferre, ubi, inquiunt, exercentur diversæ sensationes visionis, auditionis, etc., quæ vulgo organis externis tribuuntur.[1]

Juxta scholasticos veteres et modernos sensatio exter-

[1] In studying the phenomena of sensation, it is important clearly to understand that the ***sensorium***, or seat of sensation, is in the brain, and not in the particular organ (eye, ear, etc.) through which the sensory impression is received. In common parlance, we are said to ***see*** with the eye, ***hear*** with the ear, etc., but in reality these organs are only adapted to receive impression which are conducted to the sensorium, through the optic and auditory nerves respectively, and there give rise to sensation — (**Baker**. ***Kirke's Handbook of Physiology,*** p. 630).

The sensory organs are only instruments of the mind, which has its seat in the brain. . . The sensation itself evidently first takes place in the brain — (**Bernstein**. ***The Five Senses,*** p. 2).

na fit in sensoriis externis, *scil.*, in extremitate nervorum, qui optici, acustici, etc., appellantur. Hi minime infitiantur ad sensationem requiri nexum et communicationem inter sensoria externa et cerebrum. Etenim «*(a)* sensoria externa recipiunt impressionem ab extrinseco, eamque cerebro deferunt; *(b)* in cerebro fit reactio, quæ necessaria est ad hoc, ut cognitio sensitiva eliciatur in sensorio externo et ut percipiatur a sensu communi, qui in cerebro sedem habet; *(c)* reactio refertur ad sensoria externa; *(d)* vi reactionis, producitur species impressa et elicitur species expressa» (**Lahousse**, *Psych.*, p. 133).[1] Nec desunt physiologi, qui doctrinæ scholasticæ patrocinentur.[2]

[1] The network of a telephone system is the best illustration of the sense organism. The outside world acts on the peripheral part and thus delivers, as it were, a message to the animal. The peripheral sense organ receives the message and transmits it by the sensory nerve to the central organ—the switchboard of the system, — and there the answer to the message is formulated and transmitted by the motor nerve to a peripheral muscle, and the result is a muscular action whereby the animal reacts upon the outside world — (**Baschab**, *op. cit.*, p. 116).

[2] It has been assumed that the nerves themselves neither feel nor initiate motion, but that both feelings and motor impulses arise in the grey matter of the nervous centres, with which the internal ends of the efferent and afferent fibres— internal end organs—are connected. This opinion has been reinforced by the fact that after severe injuries to the spinal cord, parts supplied with nerves which take origin below such injury become deprived of sensibility and of the power of voluntary motion, while irritation of the cut surface of the proximal part of a divided nerve in a limb-stump may produce a sensation, which feels as if it took place in parts which no longer exist — as. ***e. g.,*** in the toes, when the leg has been amputated. But in fact these phenomena are susceptible of another explanation, and one that admits the belief that sensation occurs there where it appears to occur — and not far away in the central part of the nervous system. For as the completion of the electrical or magnetic circuit is necessary for the electric or magnetic discharge, so a certain integrity of the nervous structure is necessary for the result of the nervous action in motion or sensation, even though such sensation really takes place at the part of the body where it seems to be felt. When, however, the integrity of the nervous structures is impaired, the motor or sensitive nervous activity is correspondingly impaired, and the occurrence of non-natural and abnormal sensations might be ***a priori*** expected to

223. Prob. Thesis. Arg. I.—Intima experientia constat nos oculis videre, auribus audire, etc., nec umquam experimur has operationes in cerebro fieri; *atqui* talis experientia, quum sit normalis, constans, et omnibus hominibus communis, fallax dici nequit, quin simul dicatur naturam ipsam ad nos fallendos esse per se ordinatam. Hæc enim experientia exprimit judicium sensus communis, quod ut prorsus indubium habendum est (v. i., n. 236). Consuetudine, inquiunt adversarii, actum sensationis tribuimus sensorio externo; atvero imprimis notandum est id, quod consuetudine enascitur, consuetudine aboleri posse, persuasionem autem de sede sensationis esse insuperabilem quis non experitur? Deinde consuetudine explicari nequit, cur bruta etiam a sua nativitate ad partes definitas corporis referant sensationes; percussa enim in pede, *in pede* se sentire ostendunt.

II. Sententia affirmans sensationem perfici in cerebro nonnullis factis certissimis adversatur. Et quidem, *(a)* physiologi testantur cerebrum posse secari, pungi vel etiam aduri, quin ideo patiens (qui simul in reliquis corporis partibus retinet normalem sensibilitatem) ullum experiatur dolorem.[1]

—*(b)* Operationibus chirurgicis et experimentis vivisectionis probatur lobos cerebrales, immo utramque cerebri hemisphæram, posse auferri in avibus et nonnullis aliis ani-

arise. The occurrence of abnormal and more or less delusive feelings after structural injury, by no means proves that sensation is not peripheral under normal conditions. It only proves that while nervous integrity is a *sine qua non* of normal sensation, it is not a condition for the occurrence of all sensation, but admits of the occurrence of feelings of an abnormal and accidentally delusive character — (**Mivart**, *The Cat*, p. 308).

[1] Milne-Edwards et la plupart des physiologistes font remarquer que pendant les opérations chirurgicales, la substance de notre cerveau peut être piquée, coupée ou cautérisée sans que la lésion produite de la sorte détermine de la douleur ou une sensation quelconque: le patient n'a pas conscience des impressions produites ainsi directement sur son cerveau, tandis qu'il sent parfaitement les impressions de même espèce sur les autres organes — (**Farges**, *L'objectivité de la Perception*, p. 152).

malibus, quin ideo evanescat omnis sensitivitas externa.[1]

(c) Unumquodque sensorium externum peculiari, eaque artificiosissima, structura donatur, qua aptum fit ad objectum sibi proprium attingendum illudque vitaliter repræsentandum *(v.g.,* oculus ad diversos colores, auris ad sonos percipiendos), quæ structura inutilis esset, et superflua ad meram receptionem et transmissionem irritationis in cerebrum; e contra, in cerebro nullum apparet organum ad sensationem externam adaptatum, sed per totum habet structuram fere eamdem.

—*(d)* speciatim, si visio perficeretur in cerebro, actus videndi terminaretur ad lucem per oculum intrantem (quod profecto non contingit), non vero ad locum, et quidem in determinata distantia, unde lux proficiscitur; videmus enim *objecta externa, colorata, lucida.*

Jamvero, hæc facta congruam explicationem accipere nequeunt, si sensatio in cerebro perfici dicitur.[2]

224. Schol. 1. Licet sensatio externa non exerceatur in cerebro, ope tamen cerebri suum finem attingit. Sensus enim externi eorumque operationes ad bonum animalis ordinantur; quod bonum sola sensatione externa obtineri nequit, quum per hanc animal percipit quidem sensibilia

[1] The appearance and behaviour of a bird which has been deprived of its cerebral hemispheres are strikingly similar to those of a bird sleepy and stupid. Let alone in perfect quiet, it will remain impassive and motionless for a long time. . . When stirred it moves, shifts its position; and then, on being left alone, returns to a natural, easy posture. Placed on its side or its back, it will regain its feet: thrown into the air, it flies with considerable precision for some distance before it returns to rest. If frequently tucks its head under its wings, and if by judicious feeding it has been kept alive for some time after the operation, it may be seen to clean its feathers and to pick up corn or to drink water presented to its beak. It may be induced to move not only by ordinary stimuli applied to the skin, but also by sudden sharp *sounds*, or *flashes of light;* and it is evident that its movements are to a certain extent guided by *visual sensations*, for in its flight it will, though imperfectly, avoid obstacles — (Foster, *Text-Book of Physiology*, p. 559).

[2] Fautores opinionis id fatentur: «Ce n'est là *(in opinione citata)* qu'un «dogme sans preuve», suivant l'aveu d'un de ses partisans les plus autorisés, *M. Richet.* «Peut-être, un jour» nous dit-il, sera-t-on étonné de notre persistance unanime à adopter sans preuve une idée fausse» — (Farges, *op. cit.*, p. 124).

propria et communia, sed ea non percipit ut sibi bona vel nociva. Ad hoc enim opus est cerebro, in quo locantur sensus interni, qui objecta sensuum externorum distinguunt, eorumque utilitatem ad individuum et speciem percipiunt, necnon eorum imagines thesaurizant ac, quando oportet, reproducunt.

Schol. 2. Physiologi multum laborant in explicando modo, quo excitatio organi externi propagetur ad cerebrum. Alii putant operationem esse electricam, alii eam esse motum molecularem, alii alias explicationes proponunt.[1] Nec minus laborant psychophysici in solvenda quæstione de *sensationis mensuratione,* i.e., in detegenda proportione, quæ vigeat inter irritationem externam et in-

[1] As to the nerves we know little except that nervous conduction takes time, that it is accompanied by electric changes, and that it is probably of a chemical nature — (Driesch. *The Science and Phil. of the Organism,* v. ii., p. 4).

What is the nature of nervous activity, is a matter of pure speculation. It has been compared with the action of electricity, of which it has been deemed a special form. It has been, and is by many, supposed to be merely one form of physical force—a mode of motion — specially transformed by the molecular structure of the masses through which it passes. It has been, and is by many, deemed to be a special kind of vital force peculiar to nerve substance.

As to the first hypothesis, the slow rate at which the nerve impulse travels is alone sufficient to refute it. Whereas light travels at the rate of 40,000 [sic] miles in a second, and electricity along a wire, at the rate of 462,000,000 feet per second — nervous influence appears to pass but at a rate varying from 80 to a little above 200 feet in a second. Again, the interposition of a piece of wire between the cut ends of a bisected nerve does not serve to convey the nervous influence. Moreover, bruising a nerve impedes its action: but no similar effect could be produced on a wire serving for the conveyance of electricity. . . As to the second supposition, it is but one form of the error, which would explain all vital action as physical, in spite of the manifest impossibility of explaining generation, to say nothing of sensation, in any such way. But one special hypothesis of the kind is that which views nervous conduction as the serial change of hypothetical nervous molecules from one physical condition to another. . . In such a conception is of any utility, as a working hypothesis to elucidate nervous physiology, there can be no objection to its use, but it must not be supposed to afford any real explanation. As to the third supposition, it is again no real explanation, though it is perhaps the most appropriate expression of the fact — (Mivart, *The Cat,* p. 305).

tensitatem sensationis seu affectionem psychicam. Legem proportionis sic formulant: Dum irritatio crescit proportione geometrica, affectio psychica crescit proportione tantum arithmetica. Hanc legem alii extollunt, alii ut merum figmentum respuunt. Et re quidem vera, ipsa sensatio nequit ex irritationis intensitate mensurari, quum sensatio formaliter consistat in actione vitali objecti representativa; ejus igitur intensitas pendet non solum ab irritationis intensitate, sed etiam a facultatis perfectione et attentione.[1] Haud vero negamus immutationem physicam, quæ præcedit vel comitatur sensationem, accurate mensurari posse (*cf. Mercier.* Manual, v., pp.197-200)

ART. II.

DE SENSIBUS EXTERNIS.

225. THESIS XXVI. — Quinque sunt sensus externi, nec plures nec pauciores.

Stat. Quæst. Quinque sensus externos distinguendos esse in homine et brutis perfectioribus est communis persuasio apud doctos et indoctos pariter. Attamen sensus tactus non est specifice sed generice unus, quia ejus objecta non videntur posse comprehendi sub una ratione formali, quæ a sensu *specifice uno* respiciatur. Quare, consideratis ejus objectis, recte cum *S. Thoma* (1, q.78, a.3) dici potest eum «esse unum *genere,* sed dividi in multos sensus secundum *speciem*». Ad tactum enim pertinent *(a)* sensationes pressionis, *(b)* temperaturæ, *(c)* voluptatis et doloris, *(d)* sensationes musculares et resistentiæ, quibus experimur conatus, quos exserimus.[2]

[1] Sensation is not simply an external impulse; its total and adequate cause includes a subjective element, *i.e.,* the excitability of the sensitive organ; in other words, the actual power or reaction possessed by the organ and derived from the soul which informs it. In overlooking the subjective element, they *(psychophysici)* have neglected the principal cause of the sensitive act. The subjective conditions of age, of temperament, of present attention, etc., cause variations in sensation. This explains how it is that two equal impulses can produce different sensations and *vice versa* — (Driscoll. *The Soul.* p. 144).

[2] The surface of the skin is a mosaic of tiny sensorial areas,

Sunt, qui sextum sensum admittendum esse putent, quia, inquiunt, phænomena in somno magnetico exhibita (*v. g.*, lectio dum oculi obstringuntur) fieri non possunt sensibus vulgo admissis. At vix fieri potest, ut homo sit naturaliter præditus facultate, quam non in statu naturali, sed solum in statu insolito et quasi violento exercere valeat. Nec in illo statu insolito ulla nova rei qualitas percipitur.

226. **Prob. Thesis. I.** — Tot (nec plures nec pauciores) agnoscendi sunt sensus externi, quot sunt organa structuram sibi peculiarem habentia, quibus objecta sensibilia cognoscimus; organa enim sunt instrumenta sensuum, et proinde diversimode sunt constructa pro diverso modo agendi facultatum. *Atqui* juxta anatomos et physiologos quinque præcise sunt hujusmodi organa; nam quinque dumtaxat organa describunt. Præterea, incredibile est existere aliud organum sensationis usque modo tum vulgari tum scientificæ observationi incognitum. *Ergo* et quinque sunt sensus externi.

II. — Facultates distinguendæ sunt juxta suas operationes suaque objecta formalia; ex his enim facultates specificantur. *Atqui* teste conscientia *(a)* operationes sen-

but these areas are not set edge to edge as in the retina, but separated by relatively wide intervals which are not sensitive to stimuli just above liminal intensity. If the stimuli are made nearly minimal, the individual fields are reduced to small spots. Each of these spots subserves a special specific sense, touch, cold, heat, or pain, and each, doubtless, coincides with the site of some end-organ, placed either singly or in clusters. The « touch spots », « cold spots », « heat spots », and « pain spots » are intercommingled. In some districts one variety predominates, in others another. « Pain spots » are the most and « heat spots » the least numerous. It is a matter of common experience that the sensitiveness of these varieties of cutaneous sensation differs in different parts of the body. The tip of the finger, which is very sensitive to the true tactile (sense of pressure or contact), is not nearly so sensitive to alterations of temperature as the forearm or cheek, to which a washerwoman generally holds her iron when forming a judgment of its temperature. Some parts of the skin are more sensitive to pain than others, and in the cornea we have an instance of a surface in which « pain spots » alone are present — (Halliburton, *Handbook of Physiology*, p. 739).

suum externorum sunt adeo diversæ, ut una haberi nequeat tamquam species subordinata alterius, nec una tamquam alterius gradus remissior vel intensior; ideoque non sunt quinario pauciores. *(b)* Præter sensibilia propria *(i.e.*, quinque objecta formalia sensuum) nullum aliud datur objectum, quod per se et primo nos ad res externas cognoscendas determinat. Nam substantia corporea, quum non sit per se extensa, non est per se sensibilis; quantitas vero et reliqua sensibilia communia percipiuntur ut sunt modificationes sensibilium propriorum. Restat igitur, ut dicatur sensus externos esse quinque tantum.[1]

227. Cor. Ergo sensationes ita exercentur per organa, ut sine organis propriis exerceri non possint; ideo enim sensoria diversam habent structuram, ut ad diversas sensationes sint apta. Falsum igitur ac fictum est hominem in somno magnetico digitis, *v.g.*, vel pedibus naturaliter videre, etc. «Visio, clausis oculis, vel interposito muro aliove opaco obstaculo, est physice impossibilis. Quia nec visio, nec ulla perceptio externi sensus haberi potest sine specie aut impressione recepta ex objecto in organo. *Atqui*, clausis oculis, vel interposito obstaculo, impossibile est, ut objecta impressionem in retinam immittant. *Ergo* visio, clausis oculis, spectata natura, dari nequit» (**Urráburu**, *Psych.*, v. iii., p. 1191).[2]

[1] « Possetne fieri, ut homo *acciperet* sextum sensum ? Id nobis negandum esse videtur. Propter naturam enim et hominis dignitatem probabile est non esse in rebus ullum genus qualitatum ex se sensibilium, ad quod percipiendum homo non habeat organa » — (**Pesch**, *Psych.*, v. ii., p. 183).

[2] Hæc dicta procul dubio verissima sunt, si corpus ullum sit penitus opacum — id, quod vix affirmari potest, tum quia existunt personæ, quibus competit facultas naturalis per opaca videndi, tum quia corpora olim opaca existimata nunc quibusdam radiis pervia reperiuntur. «Beaucoup de faits, inexplicables pour nos pères nous apparaissent aujourd'hui tout naturels. Ces phénomènes de vision en particulier, à travers les couches opaques du sol, cette faculté d'apercevoir les métaux, les cours d'eau cachés dans le sol, privilège de certaines personnes, n'ont plus raison de nous surprendre. Aux yeux de la science, il n'y a plus de corps véritablement opaque. Les rayons qui nous viennent du soleil, sont plus nombreux, plus variés qu'on ne le croyait jusqu'ici. Chaque substance y trouve sa lumière vis-à-vis de laquelle elle est transparente

228. Schol. **De relativa sensuum perfectione.** Licet sensus hominis et bruti sint specifice iidem, tamen simpliciter sumpti perfectiores sunt in homine quam in bruto, eo quod in homine habent aliquam connexionem cum intellectu eique subordinantur. Unde, in homine, secus ac in bruto, visus et auditus pulchritudine et harmonia delectantur; olfactus odores appetit propter se, non tantum in ordine ad gustum, ut accidit in brutis; gustus et tactus specialem habent aptitudinem ad rerum qualitates discernendas. Nonnulli tamen sensus brutorum, qua tales, sensus hominis multo superant.[1]

229. Si sensus hominis considerantur, 1°. *Ratione sui*, ceteris præstat *visus*, cujus organum aliquid spirituale prae se fert, cujus sphæra cognitionis amplissima est, cujus vis plurimas rerum proprietates (diversos colores et omnia sensibilia communia) intuetur ac distinguit. Succedit *auditus*, qui amplam habet sphæram, et præter sonum ejusque qualitates, aliquo modo numerum, motum et quietem cognoscit. Proxime accedit *olfactus*, qui ad suum exercitium non ipsum objectum, sed particulas inde effluentes requirit. Deinde *gustus* ad quem objectum debet esse physice præsens, sed in statu soluto. Demum *tactus*, qui objecti contactum, absque ulla mutatione, postulat.

comme le cristal; elle en reçoit des rayons qui la pénètrent, et qui, après l'avoir pénétrée, sont arrêtés, absorbés, réfléchis par les autres substances. Celles-ci alors se dégagent en son sein, et révèlent leur silhouette, leur profil, comme à travers une pâte transparente. . . Pour certains rayons le corps humain est transparent, les rayons X sont de ce nombre; mais parmi les radiations solaires, il en est qui sont plus subtiles encore.—(Barenton. *La Science de l'Invisible,* p.58).

[1] The senses of animals, as a rule, surpass the senses of man. Their sight, hearing, and smell are stronger and keener. The eagle can bear the glare of the sun while he wings his way through the bracing air, and the falcon can see his prey while coursing in aerial space; the hare can detect the faintest sound near by; the dog can scent his prey anywhere. . . However, there is only one sense very prominent in the animal — the sense most usually exercised in procuring subsistence, in self-defence, or in attack. No animal has all the senses as perfect as man, and none has them so completely and judiciously under control for every necessary occasion—(Thein, *Christian Anthropology,* p. 167).

2°. *Ratione utilitatis (a) physicæ,* primum locum obtinet *tactus,* quia ad vitam conservandam est maxime necessarius. Unde, nulli animali deest. Hunc sequitur *gustus,* quem, sicut tactum, animalia a sua nativitate evolutum habent; *(b) intellectualis*, utilissimi sunt *visus* et *auditus,* visus quidem ad *inventionem* veritatis, *auditus* autem ad *disciplinam,* quæ fit mediante aliorum magisterio.[1]

3°. *Ratione certitudinis*, præeminent *tactus* et *visus:* — *tactus,* quia sine medio objecta attingit, et plures eorum proprietates potest simul apprehendere; *visus,* quia, sicut tactus, potest diversas corporum proprietates simul percipere; quatenus vero ratione medii non parum est illusionibus obnoxius, tactui cedit.

ART. III.

De Sensibus Internis.

230. Præter sensus externos agnoscunt scholastici in homine et in brutis perfectioribus, quattuor alios sensus, quos *internos* vocant, eo, quod intra sentiens organa eorum latent. Hi sunt *sensus communis, phantasia* seu *imaginatio, vis æstimativa, memoria sensitiva.* Quos sensus non pauci perperam intelligentes, brutis rationem attribuunt.

[1] « Est notandum (ait **Suarez**) duos esse modos acquirendi scientiam, scilicet, disciplinam et inventionem. Ad priorem modum utilissimus est auditus, ut per se constat; quia voces sunt signa conceptuum; solus autem auditus voces percipit, et quamvis ipse non percipiat eorum significationem, sed mens, satis est quod sit organum proprium, quo mediante, tale signum ad mentem pervenit. . . Etiam visus plurimum deservit ad disciplinam; nam etiam scripturæ sunt signa conceptuum, et illæ percipiuntur visu; unde multi plura videntur addisci lectione, quæ visu fit, quam auditione. Est tamen discrimen, quod tota fere utilitas scripturæ potest etiam auditu percipi, non tamem e converso; ea enim energia, vis ac claritas, quæ est in voce ad exprimendos proprios conceptus, non potest scriptura sola aut visu suppleri: unde legimus nonnullos carentes visu fuisse doctissimos, partim auditis solis scriptis aliorum, partim etiam explicationibus seu doctrinis viva voce sibi propositis; quod vero aliquis omnino surdus evaserit doctissimus, me legisse non memini, et vix id fieri posse existimo» — *(Meta. Disp.*, 1, s. 6, n. 11).

Existunt tamen personæ, quæ, etsi visu, auditu et loquela orba-

231. Obs. — Quattuor sensus internos auctores communissime recensent: utrum vero sint realiter distincti necne, acriter controvertitur. Quum quæstio non sit magni momenti, satis erit diversas opiniones auctorum breviter statuere. Prima sententia est *S. Thomæ* (1, q. 78, a. 4), qui quattuor sensus esse realiter distinctos affirmat. Idem docent *Sanseverino*, *Monaco* aliique. *Ratio.* Sensus communis, phantasia, etc., terminantur ad objecta formaliter distincta; facultates autem specificantur ab objectis formaliter distinctis: *ergo.*

Quidam alii sensus internos tres esse arbitrantur. « Attento singulorum diverso operandi modo (ait Schiffini, *Cosm.*, n. 189), ac proprio cujusque objecto, mihi probabilius videtur memoriam ab æstimativa non differre, æstimativam e converso differre a phantasia, sensum autem communem ab utraque distingui ».

Idem fere sentit *Pesch* (Psych., v. ii., p. 286). Memoriam enim quatenus involvit rei repræsentationem, reducit ad phantasiam: quatenus rei recognitionem involvit, non differre existimat ab æstimativa, « quippe qua cognoscamus phantasma esse imaginem rei hoc vel illo modo relatæ ad cognoscentem ».

Donat phantasiam et memoriam unum facit sensum, qui dicitur phantasia, quando reproducit, et memoria, quando recognoscit (Psych., p. 110).

Alii sensum communem cum phantasia, æstimativam cum memoria identificant.

Alii denique post *Suarez* (De an., lib. 3, c. 30) nullam se reperire affirmant rationem multiplicationis sensuum, et proinde prædictas potentias revera non esse nisi unum sensum diversas functiones exercentem, et exinde diversis nominibus appellatum arbitrantur (cf. *Lahousse*, Psych., n. 221; *Urráburu*, Psych. v. ii., p. 762; *De Backer*, Psych., v. i., p. 188; *De la Vaissière*, Psych., p. 177).[1]

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tæ (*e.g.*, Laura Bridgeman, Helen Keller), ope tactus solius satis doctæ evaserunt, et munere magistræ surdomutorum functæ sunt: immo, opera litteraria publici juris fecerunt.

Helen Keller is blind, deaf, and dumb, and yet, as Seashore has remarked, « she lives a more intelligent and cultured life than the average college graduate », although she has no other possible images to guide her than tactive, gustatory, and olfactory modalities. She forms her opinion of the character of her interlocutors by touching their hand — (De la Vaissière, *Elements of Experimental Psych.*, p. 85).

[1] Suarez, after a careful examination of the various opinions on the point, decides against the existence of either a *real* or a *formal* distinction, and contends that Aristotle is with him in looking on the internal senses as merely diverse aspects or phases of a single sensuous faculty — (Maher, *Psych.*, p. 96).

§ 1. De Sensu Communi.

232. **Sensus communis** definitur: *facultas organica, qua animal percipit actus et objecta*[1] *sensuum externorum in eorum præsentia*. Dicitur *communis,* tum quia se extendit ad omnes actus et objecta sensuum externorum, tum quia est horum *radix* et *terminus*: — *radix,* quia ad omnem sensationem externam concurrit ut causa efficiens remota; *terminus,* quia quum ab eo remote procedat actus vitalis sentiendi, pariter in eo recipiatur necesse est (cf. S. *Th.*, De an., 1. 3, lect. 3).

Existentia sensus communis probatur. Experientia constat nos distinguere non solum inter objecta ejusdem sensus externi (*v.g.,* inter *album* et *rubrum),* sed etiam inter objecta diversorum sensuum (*v.g.,* inter *hoc album* et *hoc dulce); atqui* hoc fieri nequit per sensus externos. Nam facultas, quæ inter plura discernit, singula percipere debet. Jamvero, singuli sensus externi non percipiunt nisi suum consentaneum objectum; *ergo* ad objecta sensuum externorum distinguenda requiritur facultas ab ipsis distincta, quæ in se recipiens sensationes externas, earum objecta comparare et distinguere potest. Quæ facultas est *sensus communis* scholasticorum. «Sensus proprius judicat de sensibili proprio, discernendo ipsum ab aliis, quæ cadent sub eodem sensu; sicut discernendo album a nigro vel a viridi. Sed discernere album a dulci non potest neque visus neque gustus, quia *oportet qui inter aliqua discernit, quod utrumque cognoscat*» (S. Th., 1, q. 19, a. 4 ad 2).[2]

[1] « Sensus communis primo et per se percipit sensationem objecti præsentis, et secundario ipsum objectum actu afficiens sensus externos » — (**Monaco**, *Psych.*, p. 371).

[2] By this faculty *(sensu communi)* we are conscious of the operations of the external sensuous faculties, and are made aware of the differences between them, though we cannot, by its means, recognise them as *different.* Apart then from intellect, by which we formally compare and discriminate between objects, some central sense or internal form of sensibility is required both in the case of a man and of the lower animals to account for the complete working of sensuous life. . . Antecedent to and independent of intellectual activity, the revelations of the several senses must be combined by some central faculty of the sensuous order, and it is

233. Eumdem sensum inesse brutis manifestatur ex eorum modo agendi; *sentiunt enim se sentire*. Nam ut videant, oculos ad objectum convertunt fixosque tenent; ut audiant, aures arrigunt, etc. Præterea, ostendunt se percipere affectiones suas subjectivas seu modificationes organicas, *v.g.*, famem et sitim, dolorem et gratam affectionem extrinsecus illatam; cibum namque et potum quærunt, injurias ulciscuntur, se grata demonstrant. *Atqui* hæ actiones inexplicabiles essent, nisi brutis inesset sensus internus et communis, qui percipit et distinguit sensationes sensuum externorum, tum quatenus sunt objectorum repræsentationes, tum quatenus sunt affectiones subjectivæ. «Non aliter bestia moveret se, vel appetendo aliquid, vel fugiendo, nisi se sentire sentiret. . . Namque aperire oculum, et movere aspiciendo ad id, quod videre appetit, nullo modo posset, nisi oculo clauso vel non ita moto se id non videre sentiret. Si autem sentit se non videre, dum non videt, necesse est etiam sentiat se videre, dum videt» (**S. Aug.**, *De libero arbit.*, 1.2,c.3).

Ex dictis sequitur sensum communem esse facultatem sensitivam; primo, quia inest brutis, quæ altiori facultate carent (n.242); deinde terminatur ad objectum sensibile et concretum, nimirum, ad sensationes resque corporeas tali vel tali modo individuali ab invicem differentes.

Obs. — Ad sensum communem revocandus est, cum *S. Th.* (1, q. 78, a. 4, ad 2), *sensus intimus* seu *conscientia sensitiva* recentiorum, quæ est facultas, qua animal experitur ut suas affectiones sensitivas in ipso orientes, ut famis, doloris, etc.

Mercier[1] vero non admittit sensum communem ut sensum ab externis distinctum, sed ut quamdam virtutem, qua diversas nostras sensationes partiales de aliquo objecto associamus, ut plenam illius objecti perceptionem formemus. Sensum intimum putat ad tactum pertinere eumque esse sensationem motus muscularis, qui sensationes externas comitatur.[2] Sed imprimis sentimus non solum mo-

tus interior spatial which has been called *sensus communis* — (**Maher**, *ib.*, p. 93).

[1] Quocum conveniunt *Janssens*, (De Hominis Natura, p. 271) et *Donat* (Psych., p. 94).

[2] Le *sens commun* ne désigne pas une faculté spéciale ayant une fonction à part, il représente le pouvoir d'*associer nos sensations*;

tum muscularem exercitium facultatum comitantem, sed etiam ipsos facultatum actus, *v.g.*, visionem qua talem. Deinde, nonnumquam (*v. g.*, in appetendo) nullum experimur motum.[1]

§ 2. De Phantasia.

234. **Phantasia** est *facultas organica, qua animal conservat et revocat species rerum per sensus externos perceptarum.* Quæ quidem definitio non ita intelligenda est, quasi phantasia non operetur dum objectum sensum externum actu afficit. «Nam certum est uno et eodem tempore in nobis exerceri, tum actum visionis alicujus objecti tum actum imaginationis de eodem. Dicitur itaque phantasia versari circa objecta in eorum absentia, quatenus per se *minime postulat* præsentiam objecti, etsi forte reipsa quandoque sit præsens» (**Schiffini**, *op. cit.*, p. 324).

Phantasia sæpe vocatur *imaginatio*, etsi hoc nomen potius designat actum phantasiæ «componentis possibilia, fingentis impossibilia».

235. Phantasia triplicem exercet functionem: 1°. *conservat* imagines rerum sensibilium; quæ imagines *phantasmata* vel etiam *imaginationes* vocantur; 2°. has imagines in statu sopito habitas *revocat;* 3°. ex phantasmatibus sic revocatis nova phantasmata *componit.* Unde, ob hanc triplicem functionem distingui solet triplex imaginatio: *conservativa, reproductiva, constructiva* seu *creativa.* Hanc ultimam quidam brutis concedunt, sed revera talis «operatio non apparet in aliis animalibus ab homine» (**S. Th.**, 1, q. 78, a. 4); requirit enim reflexionem super sensationes earumque partium similium vel dissimilium comparatio-

et le *sens intime* désigne, de son côté, le pouvoir de sentir que les sensations se produisent, autrement dit, que les *organes des sens* sont en *fonction* (p. 241). Et iterum (p. 244): «Lorsque les organes des sens spéciaux fonctionnent, leur appareil musculaire nous donne le sentiment de contractions exercées, et ce sentiment, identique en nature, quelle que soit la sensation extérieure qui l'accompagne, serait le sens intime» — (**Mercier**, *Psych.*, v. i.).

[1] Ad ogni modo noi ci troviamo nella impossibilità di accettare la teoria del *Mercier*, che tende ad identificare l'organo del senso intimo con quello del tatto et del senso muscolare – (**Miniati**, «Gregorianum», 1920, p. 126).

nem aptamque conjunctionem, quæ sunt operationes intellectus.[1]

236. Hæc constructio phantasmatum quandoque sponte fit juxta leges associationis (*Log.*, n. 32), quandoque absque lege, ut contingit in somnio, et in delirio; quo accidente, phantasia permiscet imagines, quæ ceteroquin nullam mutuam habent connexionem.[2] Perfectior autem compositio est ea, quæ fit sub influxu voluntatis; hac namque interveniente, maximam habere potest utilitatem phantasia, quum ipsa per analogias, comparationes, vividasque illustrationes, ideas abstractas mentis captum excedentes formis quasi sensibilibus induat factaque suis coloribus depingat, et sic veritas facilius ad intellectum pervenit et tenacius in memoria conservatur.[3] Hæc est phantasia eorum, qui in arte præcellunt.

[1] The ideals of science and of art, of achievements and of duty, are the products of that form of psychical activity which is properly called the creative imagination. It is *imaginative,* because the representative or imaging power is conspicuously prominent in its functions. It is creative, because there is no counterpart in nature from which its objects and products are literally transcribed or copied. It is to be observed, however, that imaging and images are not the sole elements in these processes or products. The imaging power, as such, is limited to the representation of the objects or actual experience, as wholes and as parts. The rational and emotional natures are absolutely essential to its existence and its exercise. There is properly no creative imagination in which the reason and the feelings are not conspicuous, and in which rational and emotional relations are not recognised and controlling. *Its creative function is rendered possible by the union of the thinking power with the imagining power;* the joint action of both resulting in these ideal products which address the intellectual and emotional nature — (**Porter**, *Human Intellect,* p. 361).

[2] Let us turn from daydreams to dreams of the night. These also are play of imagination, even freer from control and criticism than daydreams... Consistency is thrown to the winds, the scenes being shifted in the middle of a speech, and a character who starts in as one person emerging presently into some one else. Dreams follow the definition of imagination, in that materials recalled from different contexts are put together into combinations and rearrangements never before experienced. The combinations are often bizarre and incongruous — (**Woodworth,** *Psych.,* p. 499).

[3] Imagination is a most legitimate instrument of persuasion. It is an indispensable instrument. The minds of men are sometimes so sluggish that we cannot get them so listen to us unless our case is

237. Sed si magna est utilitas phantasiæ, magna etiam damna secum trahere potest, nisi jugo rationis stricte subdatur. Nam phantasia, cui habenæ laxæ dantur, animam ab inquisitione veritatis avertit vel saltem ejus cogitationes perturbat suisque fictionibus depascit; generat fastidium rerum supernaturalium, viresque mentis enervat; quodsi ejus inordinatum exercitium multum diuque foveatur, inducit periculum illusionum vel etiam dementiæ (cf. *Pesch,* Psych., v. ii., p.260).[1]

238. Phantasiam esse facultatem organicam aperta experientia notum est; sua enim objecta repræsentat cum eorum conditionibus sensitivis quantitatis, coloris, soni, etc., nimirum, cum accidentibus propriis et communibus, quæ sensibus externis apprehenduntur.

Idem probatur ex eo, quod hæc facultas brutis competit, ut constat ex eorum operationibus. Ipsa namque in cubilia vel nidos redeunt, prolem amissam conqueruntur, in somno latrant, etc., quæ operationes supponunt facultatem phantasmata rerum absentium conservantem.

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stated with a warmth and vigour which the imagination alone can supply. There are many, again, who are not accessible to abstract argument, but who recognise truth at once when it assumes that concrete form with which imagination may invest it: they cannot follow the successive steps of your demonstration, but they admit the truth of your proposition the moment you show them your diagram. Then, again, there are some truths, and these among the greatest, which rest, not upon abstract reasoning, but on facts. Imagination must make these facts vivid and real — (**Dale**, *Lectures on Preaching,* p. 48).

[1] Imagination is a mental power of extensive influence, and capable of being turned to important purposes in the cultivation of individual character. But to be so, it must be kept under the strict control of reason and of virtue. If it is to be allowed to wander at discretion through scenes of imagined wealth, ambition, frivolity, or pleasure, it tends to withdraw the mind from the important pursuits of life, to weaken the habit of attention, and to impair the judgment. It tends, in a most material manner, to prevent the due exercise of those noble powers which are directed to the cultivation both of science and of virtue — (**Abercrombie**, *Intellectual Powers,* p. 165).

Keep the faculty of imagination alive, but apply it according to reason. Develop it, but control and direct it and do not be led by it in your judgments and actions — (**Dubray**, *op. cit.*, p. 83).

§ 3. De Vi Æstimativa.

239. Vis æstimativa est *facultas organica, qua animal in rebus materialibus cognoscit concretam rationem commodi vel incommodi, quam sensus externi non cognoscunt.*

Hæc facultas dicitur *æstimativa,* quia per eam fit æstimatio circa res externis sensibus perceptas, at non prout exterius apparent, sed prout commodum vel incommodum habent, sive relate ad ipsum animal sive ad aliquid aliud. Ope vero hujus facultatis non percipitur ipsa ratio commoditatis vel incommoditatis, sed res singularis concreta, quæ est commoda vel secus. Aliis verbis: ob quandam dispositionem subjectivam animal rem sibi utilem percipit ut jucundam et gratam, rem sibi nocivam percipit ut injucundam et molestam, etsi hæ proprietates seu affectiones non sunt revera sensibiles.

240. *Existentia hujus facultatis* passim manifestatur in brutis, et in hominibus; observamus namque quomodo sponte naturæ et absque experientia per sensus externos acquisita aves tempore opportuno paleas ad nidificandum colligant, pulli anatis in aquam se immergant, pulli gallinæ illam evitent, lepus, cane viso vel audito, aufugiat, etc. Præterea, bruta effectus mira arte conspicuos producunt per integram quandoque seriem operationum, quos prima vice perfectissime exsequuntur, etsi numquam aliud brutum eosdem effectus producens conspexerint.[1] Atqui ex una parte tales cognitiones non exercentur sensibus externis, quia objecta, quæ ratione prorsus eadem hos sen-

[1] The bird divines that it is in need of a nest, and this nest is a wonder, on account of the choice and combination of the materials used for its construction. The beaver knows beforehand that he will be in need of a hut, and this hut is a wonder on account of the profound knowledge of architecture which the animal displays in its construction. The spider knows that it is in need of a net, and this net is equally a wonder, both on account of its weaving and the success with which it serves as a snare. Here are faculties which reveal a certain amount of intelligence, and, nevertheless, we call this intelligence « instinct ». Why? Because, however perfect the acts may be which are its expression, the animal has neither learned nor calculated, nor foreseen them. It possessed the germ thereof from its birth as well as it possessed the germ of its physical development—(**Thein,** *Christian Anthropology,* p. 184).

sus afficiunt, ratione omnino diversa percipiuntur, alia nimirum ut utilia, grata, amica; alia vero ut nociva, ingrata, inimica.[1] Nec ex altera parte intellectui referri possunt; intellectus enim non judicat rem esse utilem vel nocivam, nisi prius eam ut convenientem vel inconvenientem apprehendat. Statim vero ac impressio ab objecto recipitur, apprehenduntur prædictæ proprietates, etiamsi animal numquam antea tale objectum senserit.[2]

[1] The lamb, St. Thomas observes, does not flee because the colour or form of the wolf is disagreeable, and the bird does not collect twigs for its nest because they are attractive in themselves; but both animals are endowed with a faculty which under appropriate conditions is excited by these phenomena to guide them in the execution of an operation ulteriorly beneficial to their nature — (**Maher**, *Psych.*, p. 587).

[2] *Instinct* signifies, both from an etymological and historical point of view, *a sensitive impulse which induces a being to perform certain actions the suitableness of which is beyond the perception of the agent* that performs them. We say expressly: « the *suitableness* of which is beyond its perception », for the immediate object to which any instinctive activity is directed, and this activity itself, are the subject matter of sensitive cognition. It is instinct that induces the male larva of the stag-beetle, before its transformation into a pupa, to produce a cocoon, the size of which is far greater than that of the pupa, and thus to provide in advance for the length of the future antlers of the imago which is to come forth from the larva. It has never seen a developed stag-beetle, and no amount of « reflection » on its part could hit upon the clever idea of its eventual destiny to become a stag-beetle with mighty antlers on its head... It is instinct that makes the young bird, which is unacquainted with any nest of its own species, collect little stalks and blades of grass and similar material for a warm nest, in which its fledglings are to be hatched: for neither by experience nor by thought or reflection could it have known before its first season of breeding that it would ever lay eggs, and that these eggs would have to be hatched, in order to produce a new generation of its own kind. It is due to instinct, when a dog that suffers from tapeworms eats Artemesia absinthium although it otherwise never touches this plant; for a study of medicine would be requisite to hit upon such a suitable treatment by its own experience. It is instinct, finally, that causes the new-born babe to express its feeling of hunger by crying and seeking its mother's breast. What is it, then, that *essentially characterises* these different instinctive actions? It is the circumstance *that their suitableness lies beyond the perception of the respective agents. The unconscious suitableness* (adaptiveness) is, consequently, the essential criterion of instinctive, in contradistinction to intelligent, actions — (**Wasmann**, ***Instinct and Intelligence in the Animal Kingdom***, p. 29).

241. Ergo operationes vis æstimativæ sunt omnes illæ operationes animalium, quæ effectum idoneum ad determinatum finem producunt, quin finis sit ab ipsis cognitus intentusve. Tales operationes generatim referuntur ad conservandum et perficiendum individuum vel ad speciem propagandam, ideoque ad prolem procreandam ac nutriendam. Dicitur *generatim,* quia in quibusdam animalibus inferioribus exhibentur tendentiæ instinctivæ suarum specierum destructivæ, aliarum vero conservativæ.[1]

[1] The psychologist should take instinctive behaviour as he finds it, and not allow himself to be prejudiced by the assumption that instinct must necessarily be useful. That has to be shown in each case, not assumed at the outset — (**Woodworth**, *Psych.*, p. 115).

. . . Another strange feature in the history of this remarkable bird *(cuculi),* is the fascination it exercises upon its adopted parents. These seem to develop a passion for its welfare more intense than in the case of their own offspring. Not only will they go on feeding it, when it is so much larger than themselves that they have to get on its back to reach its mouth, but if their bantling happens to be taken from them, they will follow the robber to a great distance, crying piteously. . . Such an instinct can clearly do nothing to serve the fortunes of the race which exhibits it, for the young cuckoo commences his career by the destruction of the young birds in the nest he occupies; being, therefore, taken as the type of a thankless usurper's treatment of his dupes — (**Gerard**, *Science and Scientists,* p. 117).

The most extraordinary and inexplicable of all migratory instincts is afforded by a quadruped, the Lemming. This little animal, a member of the mouse family, lives habitually in the east of Norway; but at irregular periods, varying from three years to ten, a large portion of them set forth on the most mysterious of pilgrimages. Their course is directed due west, and thus does not lead them to the regions where most plentiful food might be obtained in the south. . . All the way along they are accompanied by another crowd of travellers for whose movements their migration is the signal. The fox, the stoat, and the hawk find a ready livelihood provided for them in the ranks of the caravan. . . All this makes it hard enough to understand what benefit this migration brings to the migrants, but it is as nothing with the final issue. Steering ever due west the Lemmings arrive at last on the shore of the Atlantic. . . . On the first calm day they plunge into the sea and the whole multitude perishes to its last member. . . This suicidal instinct is no doubt mightily convenient to the world at large, in so effectually checking the unlimited increase of these prolific rodents, but within the limits of their race it cannot be said to have any advantages to recommend it — (**Gerard, *ib.*,** pp. 126-8).

The blood-red robber-ant in entertaining as guest the *Lomechu-*

242. Ex hac facultate proveniunt ea omnia, quæ bruta mirifice operantur, quæque consilio et summa scientia effecta esse videntur. « Bruta animalia (ait **S. Thomas**, 1, 2, q. 46, a. 4) habent instinctum naturalem ex divina ratione eis inditum, per quem habent motus interiores et exteriores similes motibus rationis». Unde, si media, quæ bruta adhibent, si opera, quæ conficiunt, in se considerantur, ingenium et scientiam patefacient, quandoque majora, quam quæ in hominibus reperiri possunt. Immo, ope hujus facultatis animalia futurum quodammodo prænoscunt, ut apparet ex signis eorum prognosticis. Atvero, hæ perfectiones non brutorum sunt, sed Creatoris, qui illis instinctum ita donavit, ut hæc omnia exsequi valeant absque cognitione finis, cur ita agant. Quod quidem iis minime placet, qui intellectum brutis tribuere volunt, parum ad id attendentes, quod si bruta intellectu gaudent ejusque ductu eorum opera diriguntur, concedendum esset plurima eorum multo hominibus antecellere, propterea quod legum naturæ et scientiarum naturalium exquisitissimam cognitionem haberent, quam porro sine experientia, sine magisterio acquisissent.[1]

sa is supporting its worst enemy, and it does so through an instinct leading to the destruction of its own species — (**Wasmann**, *The Problems of Evolution*, p. 47).

[1] Exemplo sint apes: « Of the three planes which constitute the floor of each cell *(in favo)*, one forms part of the bottom of each of the three cells, against which it abuts on the opposite side. Now it can be proved by the aid of a difficult and elaborate mathematical calculation that, in order to combine the greatest strength with the least expenditure of material, the edges of these planes should have a certain fixed inclination: and the angles formed by the bees were ascertained by the measurement of Maraldi to be 109° 28′ and 70° 32′ respectively. By the very intricate calculation of König, it was determined that the angles for such a purpose should be 109° 26′, and 70° 32′. Here was a wonderful coincidence! the bees and the mathematicians differed by the small discrepancy of two minutes of a degree, or $\frac{1}{10800}$ part of a circle, an infinitesimal space in so small a thing as a bee-cell. Were the bees by this minute fraction at fault? or did the geometrician err? We shall see.

Maclaurin, the Scotch mathematician, was not satisfied with this explanation, and applied himself to a fresh and careful inves-

243. Homo, eo quod omnes naturæ sensitivæ facultates possidet, habet vim æstimativam, et æstimationes instinctivas, quæ sæpe præcedunt, comitantur vel sequuntur intellectus judicia. Sic, huic facultati adscribendæ sunt illæ sympathiæ et antipathiæ, quas nonnumquam vel inviti experimur, ut quum ægroti fastidimus cibum, quem sani appetere solemus. Ejus vero exercitium maxime apparet in pueritia et in hisce vitæ adjunctis, quando ratio dormitat vel tempus ad judicandum non suppeditat. Sic, *v.g.*, duce natura, et absque deliberatione corpus nostrum convenienter movemus, ut casum vel ictum evitemus. In homine tamen hæc facultas denominatur potius *vis cogitativa,* vel etiam *ratio particularis,* quia propter ejus unionem cum intellectu, majorem in homine quam in bruto excellentiam sortitur, et per quoddam judicium, non quidem *formale* (quod comparationem terminorum importat), sed *materiale* discernit quid sit utile vel noxium; immo, «vis cogitativa primarie ad id destinatur, ut ope ejus res singulares hujus mundi *qua has singulares hic et nunc præsentes* (homo) intelligere possit. Quare, in homine actus vis cogitativæ oriuntur circa omnes res, quas sensu percipit; actus autem vis æstimativæ in bruto non exsurgunt nisi cum respectu ad ea objecta, ad quæ organismus ejus specialem relationem habet» (Boedder, *Psych.*, n. 109). «Co-

tigation of the question. He showed that, owing to a slight misprint in the logarithmic tables, the result previously obtained was erroneous to the exact amount of two minutes! So the bees were in the right, even to this infinitesimal fraction, and the mathematicians wrong. What does this mean? Why, simply, that the Creator has chosen to endow the bees with an instinct so wonderful that their work is perfection itself, and no man could imitate it, even though his highly intellectual powers were aided by the most delicate instruments. Now mark, that what would take the apprenticeship of a lifetime for a man to do, these bees do without any teaching at all; for only a few hours after their transformation to perfect insects they commence their labour. . . They have no power to make their cells otherwise, and herein instinct differs from reason. The former is a special endowment for a special purpose, without any free will; the latter prompts to different courses of action according to different circumstances — (Kinns, *Moses and Geology*, p. 330).

gitativa (inquit S. Thomas) *apprehendit individuum ut existens sub natura communi,* quod contingit ei, in quantum unitur intellectivæ in eodem subjecto; unde cognoscit hunc hominem, *prout est hic homo,* et hoc lignum, *prout est hoc lignum. Æstimativa* autem non apprehendit aliquod individuum, secundum quod est sub natura communi, sed solum secundum quod est terminus aut principium alicujus actionis vel passionis; sicut ovis cognoscit hunc agnum, non in quantum est hic agnus, sed in quantum est ab ea lactabilis, et hanc herbam, in quantum est ejus cibus» (*De An.,* 1,2, lect., 13).[1]

Obs.—De vi cogitativa apud Cardinalem Newman vide *Boedder*, n. 115.

§ 4. De Memoria Sensitiva.

244. **Memoria sensitiva** est *facultas organica, qua animal recognoscit species sensitivas antea habitas.*

Memoria sensitiva phantasiam præsupponit eique aliquid superaddit. Nam phantasia servat et revocat imagines sensitivas prius acquisitas, eas tamen ut prius habitas haud cognoscit. Hoc alterum facit memoria, nimirum, sensationes rerum sensibilium *ut jam antea expertas* repræsentat. Unde, in recognitione actus memoriæ formaliter consistit. «Ad memoriam, prout ejusmodi (inquit Schiffini), generatim pertinet *recognitio præteriti, ut est præteritum.* Propterea ad hunc actum minime sufficit, ut species olim acceptæ iterum reproducantur, sed requiritur, ut repræsententur affectiones olim habitæ, *ut habitæ,* in quo invenitur repræsentatio successionis cujusdam inter priorem apprehensionem et præsens *nunc.* Differt igitur hæc operatio a simplici imaginatione, vel recogitatione, duplici de causa potissimum. Nam primo, ad actum imaginationis vel etiam intellectualis recogitationis sufficit iterata conversio sive phantasiæ sive intellectus ad ob-

[1] « *Aristoteles* neque vim æstimativam neque cogitativam commemorat. Sed eas primum Avicenna et Averrhoes intulisse videntur, a quibus eas Albertus M. et Thomas acceperunt » — (**Donat.** *Psych.,* p. 117).

jectum, quamvis non attingatur actus perceptionis olim habitus. Contra, per memoriam facultas convertitur directe ad ipsum actum perceptionis præhabitæ, et indirecte ad objectum ea perceptum. Præterea, memoriæ actus essentialiter pendet ab objecti existentia reipsa olim exercita; contra accidit in simplici imaginatione vel recogitatione, ut facile considerari potest» *(op. cit.,* p. 326).

245. Exinde sequitur 1°. munus esse memoriæ referre species sensibiles per phantasiam revocatas ad actus præteritos cognoscitivos et ad objecta per hos actus cognita; 2°. omne, quod exhibetur in actu memoriæ sensitivæ, esse concretum et qualitatibus sensibilibus affectum, et proinde ipsam facultatem, quæ talem actum elicit, esse sensitivam et a materia intrinsecus dependentem. Et revera, memoria in suo actu respicit *(a)* individualem cognitionem sensibilem, *(b)* influxu determinati objecti materialis quondam excitatam, *(c)* in hoc sensu externo, *(d)* in his præteriti temporis adjunctis. Præterea, brutis, quorum omnes facultates sunt organicæ, inest memoria, ut experientia constat; *v.g.,* dominum suum recognoscunt, disciplinæ sunt capacia, sæpe in similibus casibus similes effectus expectant.

246. In homine memoria sensitiva, sicut ceteræ facultates sensitivæ, quamdam eminentiam acquirit ex rationis et voluntatis influxu. Nam, præter spontaneum memoriæ actum, qui dicitur *simplex recordatio,* habet alium actum, quo recuperat cognitiones, quarum partim oblita est. Qui actus vocatur *reminiscentia,* et definitur: *operatio, qua homo ope imperfectæ recordationis assequi conatur plenam alicujus rei recognitionem.* Ad quem processum multum confert phantasmatum associatio. Primo enim occurrit aliquod phantasma; ad quod deinde attentionem dirigimus, ut sic aliud phantasma cum priori connexum excitemus; ad novum hoc modo excitatum similiter attendimus, et sic deinceps usque dum e statu oblivionis ad statum plenæ recordationis alicujus facti præteriti deveniamus.[1]

[1] It is in the act of *reminiscence* or *recollection*, in the sustained effort to recall some past experience, we perceive most clearly that

«Et ideo reminiscendo venamur, *i.e.*, inquirimus id, quod consequenter est ab aliquo priori quod in memoria tenemus. Sicut enim ille, qui inquirit per demonstrationem, procedit ex aliquo priori, quod est notum, ex quo venatur aliquid posterius, quod est ignotum; ita etiam reminiscens, ex aliquo priori, quod in memoria habetur, procedit ad reinveniendum id quod ex memoria excidit» (S. Th., *De Mem. et Rem.*, lect. 5).

247. Generatim dicendum est, quo major sit gradus attentionis ad objecta, eo tenacius eorum species retineri, eoque facilius ut prius cognita recognosci. Attamen hæc tenacitas ac facilitas non parum pendent a valetudine ac ætate, necnon vigore lassitudineve cerebri aliisque causis accidentalibus.[1]

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the current of representations which passes before our consciousness does not proceed in an entirely casual and lawless manner. Starting from a vague notion of the event which we wish to remember, we try to go back to it by something connected with it in time, in place, or by any other kind of affinity. We first endeavour to place ourselves in the mental situation of the original incident. Then we notice that by fixing our attention on any particular occurrence we bring it into greater vividness, and numerous attendant circumstances are gradually recalled. Our ordinary procedure is accordingly to seize upon, and intensify by attention, the force of that one of the newly-awakened recollections which we judge most likely to lead to the desired end. When our gaze is focussed on this fresh centre, a new system of objects related by similarity, contiguity, or contrast, begins to emerge from obscurity, and here we repeat our process of choice, picking out again the most promising train. By reiterated selections and rejections of this kind we approach gradually closer and closer to the object of pursuit, until it finally flashes upon us. . . Throughout our investigation we must have had some vague idea, some general outline or the experience of which we are in search, in order to direct us along the more likely paths. This is made evident in the final act of recognition, for in this stage we become conscious that the rediscovered fact fits precisely into the vague outline still retained — (**Maher**, *op. cit.*, p. 180).

[1] It is natural, in this connection, to notice the *moral* conditions of a good memory. The man who would have a strong and trustworthy memory must always be true to it in his dealings with himself and with other men. He must paint to his own imagination, with scrupulous fidelity, whatever he has witnessed or experienced. He must never so yield to the bias of interest or passion as to strive to persuade himself, even for a moment, that events

CAPUT SECUNDUM.

De Appetitu Sensitivo.

248. Appetitus *(ad-petere)* in genere est tendentia in bonum conveniens. Hæc tendentia est omnibus entibus communis; unumquodque enim pondere suæ naturæ fertur in aliquem finem suæ naturæ consentaneum, ideoque ad exercendas suas operationes proprias, quibus illum finem consequi possit. Unde, prout diversæ habentur naturæ et facultates, diversæ sunt tendentiæ, quæ rebus competunt.

Hæc tendentia innata, prout non cognoscentibus inest, modo *impulsus,* modo *conatus* vel *nisus,* modo, sensu metaphorico, *appetitus naturalis* vocatur (v. i., n. 464). In cognoscentibus autem existit, præter naturalem tendentiam, specialis potentia appetitiva; cognoscentia enim apprehendunt quid sibi sit bonum et petendum, quid sibi sit malum et fugiendum. Nihil vero prodesset hæc duplex cognitio sine facultate petendi et fugiendi objecta cognita. Hæc facultas sensu proprio dicitur *appetitus,* et *sensitiva* vel *intellectiva* est, prout sensitiva vel intellectiva est cognitio, quam sequitur. Impræsentiarum agimus de appetitu sensitivo.

Obs. — Immerito quidam docent «appetitum sensitivum non esse facultatem specialem, sed tendentiam nativam animæ» *(Pesci,* Psych., pp. 245 sqq.). Nativa enim tendentia ex rei forma resultat, ideoque est invariabilis, ejusque terminus est bonum verum; ap-

were different from what he knows they actually were. He must seek to repeat to others the precise words of what he has heard or read, whenever he makes communication by language. Such a moral discipline to internal and external honesty both implies and enforces a mental discipline to earnest and wide-reaching attention — an attention which does complete justice to every object that comes before it, and which neither slights nor omits anything which ought to be brought to view. An intellect that is regulated and held to its duties by the tension of such a purpose will act with the precision and certainty of clock-work. Its recollections will be trusted by others, because they are trusted by the person himself, and for the best of reasons — because he is true to what he remembers — **(Porter, *Human Intellect,* p. 324).**

petitus autem sensitivus sequitur cognitionem, ejusque actus sunt diversi pro diversis cognitionis adjunctis, et non solum bonum verum, sed etiam bonum apparens, respicit. Requiritur igitur ad hujusmodi actus eliciendos facultas specialis et a tendentia nativa omnino diversa.

ART. I.

DE NATURA ET ORGANO APPETITUS SENSITIVI.

§ 1. De Ejus Natura.

249. Appetitus sensitivus definitur: *facultas, qua animal prosequitur bonum vel refugit malum sensu apprehensum.* Distinguendus igitur est a facultate nutritiva animalis, quæ antonomastice *appetitus* vocatur.

Bonum conveniens animali, qua tali, est bonum corporeum in concreto apprehensum phantasia vel vi æstimativa. Quum autem prosecutio boni perfectioni alicujus entis accomodati involvat fugam mali cogniti tamquam huic perfectioni oppositi, hæ non ut actus distincti habendæ sunt, sed potius ut duplex respectus ejusdem actus. Unde, *objectum* appetitus sensitivi sic describitur: *bonum sensibile apprehensum ut conveniens.*

250. Hic claritatis gratia oportet notare quomodo, 1°. differat appetitio a cognitione, necnon 2°. appetitus sensitivus ab appetitu intellectivo seu voluntate. 1°. *(a)* Cognitio tendit ad suum objectum repræsentandum, tendit, *scil.*, ad habendam *intentionalen* rei possessionem; appetitus vero, præsupposita hac possessione, ad *realem* sui objecti possessionem tendit. «Hoc distat inter appetitum et intellectum vel quamcumque cognitionem; quia cognitio est secundum quod cognitum est in cognoscente; appetitus autem est secundum quod appetens inclinatur in ipsam rem appetitam» (S. Th., 1, q. 16, a. 1). *(b)* Cognitio per se et semper perficit cognoscens, appetitus autem sæpe affert appetenti magnum damnum, quando nimirum bonum appetitum est tantum apparens (v. i. n. 299)[1] *(c)*

[1] To know good, is good; to know evil, is also good; to wish good, is good; to wish evil, is evil: here is a difference between

Cognitio cognitioni opponi nequit; cognitio enim importat rei similitudinem; una autem similitudo altera ejusdem rei similitudine magis vel minus perfecta esse potest, ei vero opposita dici nequit. At fieri potest, et sæpe fit, ut quod convenit appetitui inferiori, superiori non conveniat, et vicissim, juxta illud S. Pauli: «Caro concupiscit adversus spiritum, spiritus autem adversus carnem, hæc enim sibi invicem adversantur» *(Ad Galat.,* c. 5).

2°. *(a)* Appetitus sensitivus solum corporea et concreta sectatur; intellectivus vero non solum hæc, sed etiam spiritualia et abstracta. Sic *volumus* non solum bona corporis, sed etiam et præcipue bona animæ, ut scientiam, virtutem, beatitudinem, etc. *(b)* Appetitus sensitivus per se acceptus non est liber, seu, non potest non tendere in suum objectum sufficienter propositum; unde, suæ actionis nullum habet dominium, sed influxu objecti ad agendum necessitatur; intellectivus gaudet plenissima libertate circa quodlibet objectum particulare, ita ut possit agere vel non agere vel contrarium agere. Porro, suum dominium exercet in appetitum sensitivum, quem pro libitu excitat, compescit, moderatur. *(c)* Appetitus sensitivus est brutis nobiscum communis, et sequitur cognitionem sensibilem; intellectivus est nobis cum spiritibus communis, et præsupponit cognitionem intellectivam.

§ 2. De Appetitus Sensitivi Organo.

251. Quemadmodum facultates cognoscitivæ ordinis sensitivi sunt organicæ, ita etiam appetitus sensitivus est facultas organica, quæ nec ad solam animam, nec ad solum corpus, sed ad compositum pertinet; facultas autem

the understanding and the will; the will may be defiled by its object, the understanding never. The moralist considers, examines, and analyses, the greatest iniquities; the politician knows the passions, the miseries, and the crimes of society; the lawyer witnesses injustice under all its aspects; the naturalist and the physician contemplate the most filthy and loathsome objects; and in all this no stain attaches to the intelligence. God Himself knows all the evil there is or can be in the physical or in the moral order, and yet His intelligence remains immaculate – (**Balmes**, *Fund. Phil.*, v. ii., p. 321).

organica expostulat organum, cui insit, et in quo suus actus perficiatur. Quæritur vero de sede hujus organi. Imprimis, omnes concedunt cor esse organum appetitus *manifestativum;* teste enim experientia, actus appetitus sensitivi, præsertim si vehementiores sunt, producunt quasdam sibi proprias et proportionatas cordis immutationes *(v.g.,* dilatationem, constrictionem, accelerationem, retardationem); utrum vero cor sit organum, in quo appetitio *eliciatur,* disputatur; alii affirmant, alii negant. Physiologi et nonnulli scholastici, non cor, sed cerebrum esse appetitus organum opinantur. Cor, inquiunt, nihil aliud est quam musculus ordinatus ad sanguinem per corpus diffundendum; nullam autem exhibet structuram idoneam ad actum appetitionis eliciendum.

Præterea, pluribus experimentis probatur, quod, excusso vel læso cerebro, cessat vel perturbatur appetitus, licet cor functiones, suas sicut antea, peragat. Contra, animal, cujus cor læditur vel morbo afficitur, retinet plenam potentiam ad actus appetitus eliciendos. Facta hujusmodi clare ostendere putant, non cor, sed cerebrum esse appetitus organum.

252. Veteres scholastici post *S. Thomam* communiter docuerunt cor esse organum, quo eliciuntur et manifestantur actus appetitus sensitivi. Quando, inquiunt, oritur sensatio boni petendi vel mali fugiendi, a cerebro (organo internæ sensationis) ad cor transmittitur per nervos ad hoc destinatos modificatio sensationi proportionata, et tunc in corde appetitio elicitur. Hanc sententiam multi nostræ ætatis in scientiis naturalibus edocti defendunt, licet illam aliquantulum attemperent principiis physiologiæ modernæ.[1] Dicunt enim cor esse præcipuum organum appetitus, sed non unicum; concurrit enim systema nerveum, et potissimum illi nervi *magni sympathici,* qui in corde continentur et ubique cum nervis sensitivis conjunguntur. «Cor enim undequaque pervaditur, immo magna ex parte constituitur nervis et ganglionibus systematis sympathici; sunt hi nervi pars integrans cordis, at-

[1] cf. **Donat** (Psych., p. 239), qui in hanc sententiam plane inclinat.

que, una cum musculis tamquam altera parte, constituunt vitale istud sanguinis receptaculum istumque sanguinis motorem. Proinde si systema illud nervorum est organum appetitivæ facultatis, cor, quod altera sui parte his nervis constituitur, hoc ipso ad organum appetitus pertinebit, sicut pertinebunt plus minusve omnia corporis organa, quæ his nervis plena sunt et partim iisdem constituuntur; eo modo, quo oculi, aures, etc., organa dicuntur et sunt visus, auditus, etc., quamvis functiones ejusmodi exerceant, non præcise ratione musculorum et aliarum substantiarum, quibus constituuntur, sed vi nervorum, quibus pervaduntur et partim constituuntur» (Leroy, *De SS. Corde Jesu ejusque cultu tract. phil. hist. dogm. asc.*, p. 33).

253. Scholastici suum systema hoc modo stabiliunt ac defendunt:—

Quod conscientia, ratio, sensus communis hominum attestantur tamquam alicujus operationis organum, id ut ejusdem organum est reputandum; per hæc enim media testimonium naturæ ipsius accipimus. *Atqui* hæc media cor (præcipue) ut organum appetitionis nobis renuntiant. Nam in corde, numquam autem in cerebro, experimur affectus sensiles lætitiæ, tristitiæ, etc., sicut in oculis vel manibus sensationes externas experimur. Et quidem, si testimonium conscientiæ valet ut ratio cur sensationes in diversis sensibus externis peragi dicantur (illud revera valere affirmant primæ opinionis patroni scholastici, *e.g.*, *Mendive, Boedder, Mercier*), eodem jure ejus testimonium admittendum est, quando renuntiat affectiones sensitivas in corde elici.

Quod conscientia testatur, ratio confirmat. Etenim operatio appetitiva, quum sit immanens et quidem ordinis sensitivi, in eo organo effici debet, in quo recipitur (n. 167, 2°); *atqui* recipitur in corde, ut omnes fatentur; cor enim est patiens in affectionibus animalis; *ergo* est etiam agens, seu est organum appetitus sensitivi.

Apud omnes vigent modi loquendi, qui cordi adscribunt diversos motus appetitus sensitivi, ut quum dicimus nos *toto corde* amare, gaudere, contristari. Quæ univer-

salis ratio loquendi adeo in natura humana radicatur, ut adversarii ipsi, velint nolintve, illam adhibere cogantur. Quis enim diceret se *toto cerebro* amare, contristari? Et tamen nihil risu dignum diceret, si in cerebro elicerentur actus appetitus sensitivi.

Denique, valde congruum est, ut facultas appetitus sensitivi in corde resideat, quia appetitus sensitivus ordinatur ad organismum nutriendum et conservandum ; nutritio autem et conservatio peraguntur ope cordis, quod per affluxum et refluxum sanguinis (qui est organismi nutrimentum) et palpitationes plus minusve vehementes motus appetitus sensitivi manifestat.[1]

254. Nec contra hæc argumenta provocandum est ad auctoritatem physiologorum. Nam «tantum abest, ut inter doctos physiologos prævaleat opinio de cerebro organo affectuum, ut potius hac ætate iterum prævalere videatur sententia veterum nimis facile a quibusdam rejecta. Dein, ne nimium tribuatur physiologis in judicio ferendo de quæstione magis philosophica quam physiologica. Physiologi quidem munus est investigare modificationes, actus et passiones cerebri et cordis; sed horum factorum relationes cum facultatibus et actibus et affectibus animi munus est philosophi ; ex altera vero parte non omnes docti physiologi sunt æque docti philosophi » (**Leroy**, *loc. cit.*, p. 26).

Facta contraria supra allata (n. 251) nullo negotio explicantur. *(a)* Gratis namque asseritur cor, eo quod mu-

[1] C'est le cœur qui, par le jeu de ses contractions spontanées, permet au sang d'aller se vivifier dans les poumons et de circuler par tout le corps pour en renouveler sans cesse la substance et l'activité ; il peut donc être considéré comme l'organe central de la vie végétative. C'est ensuite dans le cœur que se manifeste à notre sens intime l'influence de la partie morale sur la partie physique de notre être. C'est donc avec raison que le cœur est considéré comme le symbole, *le siège, l'organe de la sensibilité*. . . C'est le sens intime qui nous persuade que nos sentiments déploient leur puissance la plus énergique dans le cœur, et pourvu que nous prenions le cœur avec tout le système de nerfs qui l'enlacent, le sens intime n'est pas contredit par la physiologie — (**Castelein**, *Psych.*, p. 311).

sculus est, non esse organum appetitus ; est quidem cor musculus, sed musculus pluribus nervis instructus. Jam, cordi, non præcise quatenus est musculus, sed quatenus est musculus nervos magni sympathici continens, vis eliciendi actus appetitus sensitivi tribuitur ; sicut oculo ratione nervi optici visio tribuitur. *(b)* Perturbatio vel cessatio actuum appetitus post cerebri læsionem vel remotionem tantum probat nullum dari appetitionem sine prævia cognitione ex parte sensus interni[1] ; læso autem vel remoto cerebro, tollitur cognitio requisita et, per consequens, appetitio, sicut ob eamdem causam tollitur intellectio, quæ exigit quidem cerebri cooperationem, minime vero ab eo elicitur. E contra, quum reliquæ cordis functiones a cognitione non pendeant, nil mirum, si, cerebro læso, has, non secus ac antea, cor exercere possit. Denique, si morbi cardiaci actum appetitionis non impediunt, ratio est, quia hi morbi non afficiunt partem ad actum appetitionis elicendum destinatam, quemadmodum non omnes morbi oculorum visionem impediunt.

255. **Consectaria.**—Corde ut organo appetitus sensitivi admisso, « intelligitur 1°. cur affectus non referantur ad cerebrum nec in eo sentiantur, nisi per resultantiam ex corde, ratione videlicet alterationum, quas varia sanguinis distributio inducere in cerebrum potest. 2°. Cur affectus tantopere influant in motus cordis et circulationem; si enim affectus exercentur per cor, nempe ratione nervi sympathici in eo residentis, nihil mirum, si cor varie moveatur appetendo ; quumque proprium nervi sympathici sit vasa sanguinis distributioni destinata moderari, hæc pro affectuum varietate, magis minusve poterunt dilatari, vel comprimi, et sic copiosius vel parcius sanguinem effundere, unde consequi poterunt rubor et pallor in facie, immo et fluxus sanguinis et apoplexia, vel e converso syncope cum morte. . . 3°. Cur quidam morbi vel dispositiones cordis possint plus minus influere, vel inclinare in hos potiusquam in illos affectus. 4°. Denique non desunt

[1] Probat « cerebrum esse organum cooperativum, sicut in perceptionibus, non autem esse organum elicitivum» (**Donat**, *loc. cit.*).

qui, constituto appetitus organo in corde, explicari egregie doceant vel ipsam affectuum expressionem, quæ in humana facie, et præsertim in oculis, mirandum in modum resplendet, videlicet ope nervi sympathici, cujus filamenta cum nervo optico, et nervis motus faciei moderantibus, complicantur. Et fortasse simili modo explicari poterit influxus ille, quem morales effectiones in vires vegetativas exercent, utpote quæ per sympathicum reguntur » (**Urráburu**, *Psych.*, v. iii., p. 63).

ART. II.

DE DIVISIONE APPETITUS SENSITIVI.

256. Celeberrima est divisio appetitus sensitivi in *concupiscibilem* et *irascibilem*. Quæ divisio desumitur ex objecto; objectum enim appetitus sensitivi semper est aliquid corporeum sensu apprehensum. Jam, animal potest tale objectum apprehendere ut sibi *bonum vel malum simpliciter*, i.e., semota omni difficultate, quæ existit ad bonum assequendum vel retinendum, et ad malum respuendum; et appetitus, ad quem refertur objectum hoc modo apprehensum, dicitur *concupiscibilis*, qui igitur definitur: *facultas, qua animal prosequitur bonum sensibile ut conveniens, et fugit malum sensibile ut molestum*. Potest etiam animal apprehendere objectum ut *bonum vel malum arduum*, i.e., circumdatum difficultatibus, quæ aut boni assecutionem impediunt aut ejus tranquillam possessionem periclitantur, aut mali remotionem difficilem reddunt; et appetitus, ad quem tale objectum refertur, dicitur *irascibilis*, qui definitur: *facultas, qua animal impugnat ea, quæ bonum conveniens impediunt vel malum ingerunt*.

Obs. — Ex dictis satis elucere videtur appetitum concupiscibilem et irascibilem esse facultates realiter distinctas; nam licet uterque versetur circa bonum et malum sensibile, tamen modo non eodem sed formaliter diverso (cf. **S. Th.**, *Q. Disp.*, xi., q. 25. a. 2).[1] Distin-

[1] Of the various classification which psychologists of different schools have offered of the emotions or passions, that of the scholastics is perhaps the best. They distinguish two aspects of sensu-

ctio realis hac in re a multis negatur, quia existimant eamdem virtutem appetitivam vocari concupiscibilem vel irascibilem pro vario actuum genere, quos exercet (cf. *Suarez,* De an., lib, 5, c.4).

257. Actus appetitus sensitivi *passiones* vocantur, quia per ipsas animal impulsum *patitur,* et quasi rapitur ad objectum petendum vel fugiendum. Nomen «passionis» multiplicem habet sensum ; imprimis enim significat quamlibet *receptionem* in oppositione ad *actionem.* Unde categoriæ «actionis» et «passionis». Deinde, sensu vulgari passio usurpatur ad designandum motum vehementiorem appetitus sensitivi, sive talis motus sit ordinatus sive inordinatus; necnon sumitur pro motu inordinato seu rectæ rationi contrario. Demum, passio denotat quemlibet actum appetitus sensitivi sive sit ordinatus sive inordinatus, sive vehemens sive non. Quo sensu de ea hic agimus.

De Passionibus.

258. Passio est *motus sensitivi appetitus sequens apprehensionem boni vel mali cum aliqua corporis immutatione.*[1]

ous appetency, or perhaps we had better say two appetites in the sensuous soul, one of which they called the *concupiscible* or the tendency towards the objects in themselves, and other the *irascible* or the appetite which seeks objects not directly in themselves, but as perceived as subject to some condition of difficulty or danger. The basis for this distinction they found in the fact that the lower emotions have not all the same formal object: some regard a good object precisely as it is cognized as good, an object therefore that is directly sought after as agreeable or avoided as abhorrent — or in other words, that is directly «loved» or «hated». There are others which, though concerned ultimately with the good, have as their immediate object the removal of some obstacle that prevents a good from being acquired, or, it may be, an evil from being averted — in other words, the object is not the good simply but the *arduous* good: it is something that is formally presented as difficult to be acquired or avoided and the emotions of «love» or «hatred» are now not simple but complicated by a special affective state which the presence of the obstacle gives rise to in the perceptive subject. The objects in the first class are of the concupiscible appetite and in the second of the irascible — (Mercier, *Manual,* v. i., p. 221).

[1] A passion is defined to be: *A movement of the irrational part of the soul, attended by a notable alteration of the body, on the*

Actus appetitus sensitivi seu *passiones* in se et universim enumerantur undecim. Tot namque sunt passiones, quot sunt actus formaliter diversi, quibus animal bonum sensibile prosequitur et malum sensibile refugit. Jamvero, hi actus — *attento appetitu concupiscibili* — sunt sex. Nam, si bonum sensibile apprehenditur absolute *(i.e.,* cum præcisione a præsentia et absentia), excitatur **amor**; si vero malum apprehenditur absolute, excitatur **odium**. Si bonum et malum apprehenduntur ut absentia, excitatur **desiderium** respectu boni, **fuga** (aversio) respectu mali. Si bonum et malum apprehenduntur ut præsentia, excitatur **delectatio** (gaudium) de bono, de malo autem **tristitia**.

— *Attento appetitu irascibili,* passiones sunt quinque. Nam, si bonum nondum adeptum existimatur adeptu possibile, enascitur **spes**; si vero existimatur adeptu impossibile, generatur **desperatio**. Si malum nondum præsens existimatur repulsu possibile, suscitatur **audacia**; si existimatur (vel *quatenus* existimatur) repulsu impossibile, oritur **timor**. Si malum est præsens, ad illud depellendum accenditur **ira**; cui nulla respondet passio in appetitu irascibili; nam, si malo præsenti animus cedit dejectus, habetur *tristitia,* quæ ad concupiscibilem pertinet. Bo-

apprehension of good or evil. The soul is made up of intellect, will, and sensible appetite. The first two are rational, the third is irrational: the third is the seat of the passions. In a disembodied spirit, or an angel, there are no senses, no sensible appetite, no passions. The angel or the departed soul can love and hate, fear and desire, rejoice and grieve, but these are not passions in the pure spirit; they are acts of intellect and will alone. So man also often loves and hates, and does other acts that are synonymous with corresponding passions, and yet no passion is there. The man is working with his calm reason: his irrational soul is not stirred. To an author, when he is in the humour for it, it is a delight to be writing, but not a passionate delight. The will finds satisfaction in the act: the irrational soul is not affected by it. Or a penitent is sorry for his sin: he sincerely regrets it before God: his will is heartily turned away, and wishes that that sin had never been: at the same time his eye is dry, his features unmoved, not a sigh does he utter, and yet he is truly sorry. It is important to bear these facts in mind: else we shall be continually mistaking for passions what are pure acts of will, or *vice versa,* misled by the identity of name — (**Rickaby,** *Moral Phil.,* p. 41).

num vero, si præsens est, potest movere concupiscibilem ad *gaudium*, minime autem potest afficere irascibilem, quum bonum præsens nullam præ se ferat difficultatem.

Passiones igitur sunt in se undecim; quæ tamen ex adjunctis indefinite variari possunt, *v.g.*, acedia, invidia, cupiditas.

259. Quædam notatu digna circa passiones:—

1°. *Passiones sunt naturales;* exurgunt enim ex composito, et, utpote inclinationes naturæ in bonum conveniens, per se tendunt in bonum physicum compositi. Quemadmodum igitur naturale est animali habere sensus, ita est ei naturale habere passiones. Unde etiam *in ordine physico* sunt bonæ.

2°. *Passiones, ratione habita ordinis moralis, nec bonæ nec malæ sunt,* sed bonæ vel malæ evadunt, prout sunt rectæ rationi conformes vel non.

3°. *Passiones sunt vitæ spirituali valde utiles;* quemadmodum enim intellectus indiget sensibus, ut moveatur ad intelligendum, ita voluntas vix in actus suos prodire potest nisi præcedit aliquis motus appetitus sensitivi. Unde intelligitur vis artium, ut poësiæ, orationis apte ornatæ, ad cor movendum et voluntatem inflammandam.[1]

[1] Though the sensitive appetite is distinguished from the will, and the two may clash and come in conflict, yet they are not two wholly independent powers, but the one man is both will and sensitive appetite, and he rarely operates according to one power without the other being brought into corresponding play. . . What attracts the sensitive appetite commonly allures also the *affective* will, though on advertence the *elective* will may reject it. A man who did his best to repress all movements of passion indiscriminately would lay fetters on his will, lamentable and cruel and unpolitic fetters, where his will was bent on any object good and honourable and well-judged. Again, man's will is reached by two channels, from above downwards, and from below upwards: it is reached through the reason and through the imagination and senses. By the latter channel it often receives evil impressions, undoubtedly, but not unfrequently by the former also. . . The abuse is no justification for closing either channel. Now the channel of the senses and of the imagination is the wider, and in many cases affords the better passage of the two. The will that is hardly reached by reason is approached and won by a pathetic sight, a cry of enthusiasm, a threat that sends a tremor through the limbs. . . Rhetoric often succeeds where mere dry logic would have been

4°. *Amor est radix ceterarum passionum.* Etenim ex boni complacentia oritur ejusdem desiderium quando abest, delectatio quando adest; odium, fuga, tristitia respectu eorum, quæ bonum amatum auferunt; necnon quinque passiones appetitus irascibilis circa ea, quæ boni assecutionem impediunt. Quum vero bonum non apprehendatur sensitive nisi in concreto, *scil.,* ut præsens vel absens, passio amoris numquam existit sola, sed inclusa in gaudio vel desiderio. Ob parem rationem cum odio semper conjungitur aversio vel tristitia. Qua ex causa quidam amorem et odium passiones *genericas* appellant.

PSYCHOLOGIÆ PARS TERTIA.

De Vita Intellectiva.

260. Prænotanda.— Hic præstantissimam quæstionem de vita intellectiva, prout in hoc mundo manifestatur, aggredimur. Nam præter vitam vegetativam vitamque sensitivam, quas homo in communi cum plantis et animalibus habet, comperitur alia vita ab organis sua natura intrinsece independens, vi cujus homo non solum gradu perfectionis, sed essentialiter seu specifice supereminet cetera animalia, et attingit ad aliquam cum spiritibus separatis communitatem. Unde, supremum inter animantia gradum obtinens, infimus est in ordine intellectualium, et tamquam nexum inter materialia et spiritualia se habet. Quamobrem homo haud immerito vocatur μικροκόσμος; nam, ut observat *S. Gregorius (Hom.* 29 in Evang.), «omnis creaturæ aliquid habet homo. Habet namque *commune esse* cum lapidibus, *vivere* cum arboribus, *sentire* cum animalibus, *intelligere* cum angelis. Si ergo commune habet aliquid cum omni creatura homo, juxta aliquid omnis creatura est homo».

Pars *psychologiæ,* quæ de homine tractat, seu *psycho-*

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thrown away. God help vast numbers of the human race, if their wills were approachable only through their reason! They would indeed be fixtures — (**Rickaby**, *op. cit.*, p. 46).

logia rationalis, sæpe vocatur *anthropologia,* quæ verbo tenus sonat *dissertatio de homine.* At anthropologia præ psychologia rationali majorem habet significationem, quum duplicem hominis partem (corpus *scil.*, et animam) includat. Jamvero, philosophia corpus humanum, quod in se spectatum pertinet ad *physiologiam* aliamve scientiam naturalem, seorsim non considerat, sed tantum in ejus ad animam relatione; ac ideo ex duabus, quæ in homine distinguuntur, partibus, philosophia unam dumtaxat (animam) sibi contemplandam assumit. Oportet igitur tale adhibere nomen, quod aperte declaret hanc philosophiæ partem non de toto homine disserere, sed speciatim de anima, nobilissima ipsius parte.[1]

261. **Præstantiam et summam psychologiæ rationalis utilitatem** nobilissimi philosophi semper strenue celebrarunt. Socrates effato Delphico «Γνῶθι σεαυτόν» *(nosce teipsum)* solebat veluti quoddam universæ sapientiæ humanæ compendium proponere. Nosse autem seipsum nemo potest nisi animæ suæ naturam, dignitatem dotesque perspectas habeat. «Non enim, inquit *Cicero,* credo, id præcepit (Apollo), ut membra nostra aut staturam figuramque noscamus; neque nos corpora sumus, neque ego hæc tibi dicens, corpori tuo dico. *Cum igitur «nosce te» dicit, hoc dicit: nosce animum tuum» (Tusc.,* lib. 1).

262. Speciatim quod attinet ad ejus utilitatem, observandum est *(a)* eam esse scientiæ moralis fundamentum, quum ex natura hominis plene cognita determinanda sint ejus jura et officia, necnon finis, in quem oportet eum agendo tendere; *(b)* eam maxime juvare ad Dei cognitionem assequendam, eo quod homo præ ceteris entibus terrenis Dei similitudinem maxime præ se fert. *(c)* «Accedit. . . quod ii, quibus in animo est theologiæ dogmaticæ

[1] « Nomine anthropologiæ multi completam et omnem de homine considerationem comprehendunt, ita ut anthropologia sit scientia de homine, non solum ut est animal, sed ut tamquam animal rationale peculiari ad mundum et ad Deum ratione gaudet. In qua permultas partes distinguunt: somatologiam, ethnographiam, linguisticam, *psychologiam,* ethicam, sociologiam, philosophiam religionis, reliquas » — (**Pesch,** *Psych.,* v. i., p. 18).

aliquando operam dare, studio psychologico de intellectu et voluntate hominis maximopere juvantur ad tractatus theologicos de ss. Trinitate, de anima Christi, de gratia actuali rite intelligendos». *(b)* «Denique, psychologia rationalis nobis arma præbet, quibus veritates gravissimas libertatis, spiritualitatis, immortalitatis divinæque originis animæ humanæ efficaciter defendamus ab impugnationibus deterministarum, fatalistarum, positivistarum et monistarum quorumlibet, sive eorum systema vocatur materialismus sive hylozoismus sive pessimismus sive nescio cujus rei ignotæ evolutionismus universalis» (Boedder, *Psych.*, p. 5).

Fons psychologiæ rationalis est conscientia; siquidem naturam animæ cognoscere non valemus nisi ex ejus phænomenis et operationibus. Accedunt vero, ut fontes subsidiarii, *observatio* sermonis et actionum aliorum hominum, quum sermo et actiones internos animæ status manifestent; *testimonium,* quo homines, quid ipsi senserint, tradunt; *historia,* quæ revelat vitam generis humani in virtutibus et scientiis colendis, in artibus exercendis, in rebus domesticis et civilibus gerendis[1]

[1] By the testimony of my own consciousness I might write Confessions, as St. Augustine. Memoirs, as Rousseau, an Apologia pro Vita Sua, as Cardinal Newman; but the result would not be psychology. It would be an important contribution to the study of mental life, but not a scientific treatise. My own individual experiences as such, however beautiful and valuable, are only personal; whereas psychology is the science of the human mind and treats not of the individual but of the species of mankind. Introspection, therefore, calls to its aid the *objective* method. This method consists: *(a)* In the observation of others. We watch their words and actions, their looks and gestures. From these we strive to learn their mental states, their habits and tendencies. In the class-room, on the street, in society, we study psychology. This can be done indirectly, as when we infer the condition of mind from an ordinary conversation or behaviour; or directly when another in words makes known his desires, thoughts, sentiments, or passions, and sets forth their interdependence or the part they play in his mental life. *(b)* The products of the mind in science and art furnish rich stores of information. Science is the effort and proof of intelligence. Art is nature as mirrored in the human soul. Poetry, literature, and the fine arts are the highest and most perfect work of the soul. They reflect the noblest sentiments, they express the

Hanc partem dividimus in duas sectiones, quarum prima exponit facultates animæ intellectivæ proprias, nimirum, intellectum et voluntatem, altera vero quæstiones ad ipsam animæ naturam pertinentes considerat.

SECTIO PRIMA.

De Potentiis Intellectivis Animæ Humanæ.

CAPUT PRIMUM.

DE INTELLECTU HUMANO.

263. De intellectu humano imprimis occurrunt investiganda ejus natura et objectum, circa quod versatur; deinde, quum intellectus indigeat aliqua dispositione, qua proxime aptus constituatur ad suum objectum cognoscendum, quæstio fundamentalis et maxime psychologica se offert, unde ideæ, quas reapse habemus, sint repetendæ, et quomodo fiant. Et hæc est celebris quæstio *de idearum origine,* ad quam solvendam diversa systemata inventa et expolita sunt.

ART. I.

De Intellectus Humani Natura et Objecto.

§ 1. De Ejus Natura.

264. **THESIS XXVI.** Est in homine facultas intelligendi, quæ est inorganica et a facultatibus sensitivis et viribus materiæ essentialiter diversa.

Stat. Quæst. — Nomine *intellectus* designatur *facultas inorganica, quæ ad cognoscendam intimam rerum naturam ordinatur.* «Nomen intellectus quamdam intimam cognitionem importat: dicitur enim *intelligere,* quasi *intus legere.* Et hoc manifeste patet considerantibus differentiam intellectus et sensus. Nam cognitio sensitiva occupatur circa qualitates sensibiles exteriores; cognitio autem in-

most delicate thoughts. The man is revealed in his work — (Driscoll, *The Soul,* p. 7).

tellectiva penetrat usque ad essentiam rei; objectum enim intellectus est *quod quid est.* Sunt autem multa genera eorum, quæ interius latent, ad quæ oportet cognitionem hominis quasi intrinsecus penetrare. Nam sub accidentibus latet natura rei substantialis; sub verbis latent significata verborum; sub similitudinibus et figuris latet veritas figurata (res enim intelligibiles sunt quodammodo interiores respectu rerum sensibilium, quæ exterius sentiuntur), et in causis latent effectus, et e contra. Unde, respectu horum omnium potest dici *intellectus*» (S. Th., 2, 2, q. 8, a. 1).

Facultas *inorganica* seu *spiritualis* intelligitur illa, quæ in *essendo* non alligatur materiæ, nec in *operando* ab ipsa *intrinsece* dependet. Dicitur *intrinsece,* quia duplex datur facultatis dependentia a materia, una *intrinseca* seu *subjectiva,* altera *extrinseca* seu *objectiva.* Habetur dependentia *intrinseca,* quando facultas suam operationem exercet per organum tamquam causam partialem, ut accidit in sensibus; *extrinseca* autem, quando concursus organi ad facultatis operationem est tantum conditio prærequisita et concomitans. Hæc altera dependentia, minime vero prior, intellectui competit, quia in ordine ad acquisitionem specierum, sine quibus naturaliter operari nequit, prærequirit operationes sensuum et phantasiæ, juxta illud: *nihil est in intellectu, quod prius non fuerit in sensu.*

265. Thesis statuitur *(a)* contra *sensistas,* qui essentialem differentiam inter sensum et intellectum negant, seu, cognitiones in homine sensitivis superiores non agnoscunt; *(b)* contra *positivistas,* secundum quos facultates nostræ non attingunt nisi quod experientia testatur (id enim « positivum » vocant), scilicet, phænomena sensibilia eorumque leges; *(c)* contra *materialistas modernos,* qui omnem cognitionem ad physiologicam functionem cerebri vel systematis nervei revocant. Cogitatio, inquiunt, et omnia phænomena intellectualia non sunt nisi cerebri secretio vel actio phosphori in cerebro contenti vel alia ejusdem ignota functio.[1] Credunt enim eamdem vim ma-

[1] In exposition of the coarser forms of materialism such asser-

terialem, quæ in materia bruta producit calorem, electricitatem, etc., posse, si apte modificetur, producere omnem activitatem vitalem, quæ in homine manifestatur.

266. Prob. Thesis. Arg. I. - Facultas inorganica est illa, quæ vi animæ solius et absque intrinseco organi concursu suas operationes exercet; *atqui* homo exercet operationes cognoscitivas, ad quas edendas nullum organum, nulla vis materialis, potest intrinsece concurrere; *ergo*.

Consequentia adest, quia facultas nequit esse inferioris ordinis quam est sua operatio; operatio enim a facultate, sicut effectus a causa, suam naturam mutuatur. Præterea, cognitio, utpote operatio immanens, recipi debet in facultate, a qua elicitur (n. 167, 2°), et proinde, si operatio est inorganica, inorganica etiam debet esse facultas eam eliciens et recipiens.

Probatur igitur minor: —

1°. *Ex objectis, circa quæ versatur humana cognitio.* Homo assurgit ad cognoscenda objecta, quæ nullam habent naturam corpoream, sed omnino spiritualia sunt (v. g., *Deum, sapientiam, veritatem),* quæque proinde nullam impressionem producere possunt in facultate organica; quod enim afficit talem facultatem debet et ipsum esse corporeum et extensum. *Ergo* in homine agnoscenda est facultas cognoscitiva in sua operatione intrinsecus independens a materia, quæ facultas dicitur intellectus.[1]

tions as the following have been boldly put forth: «*La pensée est une sécrétion du cerveau*» (Cabanis). «There subsists the same relation between thought and the brain as between bile and the liver» (Vogt). Moleschott describes thought as a «motion in matter» and also as a «phosphorescence» of the brain. . . In a scarcely less crude way consciousness is sometimes described as a *function* of the brain: «There is every reason to believe that consciousness is a *function of nervous matter*» (Huxley) — (**Maher**, pp. 496-7).

Many are the devices used to cover the crudeness of the «great psycho-physical formula: Thought is a function of the brain». . . Materialism, if consistent, must say that «neurosis» *is* «psychosis» — (**Gruender**, *Psych. without a Soul*, p. 190).

[1] A mere sensitive faculty, inasmuch as its capacity is limited to sense-perceptions, can never acquire a knowledge of things simple. Even if the simple could in any way become the object of sense-perception, a sensitive faculty, being itself compound could not

2°. *Ex modo, quo objecta materialia apprehendimus.* Objecta materialia apprehendimus non modo directe, prout sub sensu cadunt, *i.e.*, prout concreta sunt ac individuata, sed etiam prout præscindunt a conditionibus concretis temporis, loci, figuræ, coloris etc., nimirum prout *universalia* sunt. *Atqui* facultas, quæ universalia apprehendit, debet esse inorganica; nam quum hæc, qua talia, non existant in ordine reali, se imprimere nequeunt in facultate organica. Unde illud: *sensus est singularium, intellectus vero universalium.*[1]

3°. *Ex vi reflexionis, quam habemus.* Inest nobis facultas, quæ in se totam redire potest, ita ut ipsa suum actum et seipsam cogitando attingat; in qua operatione facultas

perceive it as simple. If all sense-perceptions be added together the total or resultant will yield nothing specifically higher. But man soars above the realms of sense-perceptions. His thoughts are unconfined by space or time. He treads down extension and divisibility. He cuts his way to the truth that lies at the root of all things. Thought resolves the composite, divisible and changeable objects of sense into their simple elements. The activity of the reason, as such, is independent of matter. Nay, as a rule, it grows in intensity the further it withdraws from matter and fixes its gaze steadily on what is immaterial — (**Schanz.** *op. cit.*, v. i., p. 261).

[1] It is in the formation of abstract and universal concepts, which prescind from the particular determination of space and time, and thus completely transcend the scope of sense that the spiritual activity of the intellect is best manifested. Abstract and universal concepts we assuredly possess. They are necessary materials of science. Judgments, whether contingent or necessary, presuppose them. Without them general knowledge would be impossible: consequently we must be endowed with some power capable of forming such ideas. But in the sensationist catalogue of faculties no such faculty is to be found. Ergo, that inventory is incomplete.

By no one has the inability of the imagination to form universal notions and concepts been better shown than by the writers of the sensationalist school itself. Berkeley, in a well-known passage, clearly states the nominalist argument declaring that whatever we imagine must have some definite size, colour, shape, and the rest. Therefore it is concluded we cannot form, any truly abstract or universal concept. The legitimate inference, however, is something very different — to wit, that the sensist assumption regarding the nature of mental life is false. Since *de facto* we do possess these abstract and universal ideas, and since the sensationist view of the mind cannot account for them, that conception of the mind must be wrong. There is some faculty omitted from its list — (**Maher**, p. 235).

cognoscens et objectum cognitum sunt plane identica *(cognoscit se cognoscere, se de sua natura cogitare)*; *atqui* facultas organica non est reflexionis capax. Facultas enim corporea in res alias potest quidem agere et ab iis pati, minime autem potest redire ad se suumque actum cognoscendum, nec proinde simul esse principium cognoscens et objectum cognitum. Nam in operando totaliter pendet a materia; materia vero, quum partibus diversis constet, non in seipsam totam, sed solum secundum aliquam partem redire potest; una pars potest esse supra aliam numquam vero tota supra totam.[1]

267. II. Est lex naturalis omnium facultatum organicarum, *(a)* ut fatigentur vel etiam lædantur ob nimiam sui objecti impressionem vel repetitionem, ut ætate hebetentur; organum enim, cui facultas affigitur, impressione vehemente usuve diuturno amittit suam dispositionem convenientem; *(b)* ut tali modo passivæ sint, ut earum actio ad objectum repræsentandum omnino determinetur ab influxu objecti; *(c)* ut ea dumtaxat objecta apprehendere possint, quæ organa afficiunt. *Atqui* facultas intelli-

[1] The mind not only knows that it thinks, but recognises its own intellectual personality as the «ego» that thinks, and thus beholds itself, and herein consists the essence of the intellect, and the proof of its immateriality. The senses feel, indeed, but they do not feel that they feel; the eye does not see that it sees, nor does the ear hear that it hears. How, indeed, could a mirror reflect itself? Yet the mind is conscious of its own thought. If the brain were the principle of thought, and could produce self-consciousness, it would necessarily be conscious of being itself the brain and the source of thought —(**Hettinger**, *Nat. Religion*, p. 200).

This mental phenomenon *(reflexionis)* finds no analogon in the realm of the material world; nay, more, it is in direct opposition to the known properties of matter. . . Molecules, atoms, electrons, may communicate to one another various motions which may be rightly or wrongly identified with the different forms of material energy. But that an atom act upon itself, is repugnant to the known nature of matter. Yet every hypothesis, making the brain the organ of introspective thought, meets precisely with the difficulty just mentioned — (**Gruender**, *op. cit.*, p. 199).

«Les forces physico-chimiques agissent d'un corps sur un autre; mais elles sont trop complètement plongées dans la matière, pour que par elles un sujet corporel puisse se replier sur lui-même et saisir son propre acte» — (**Gardair**, *Corps et Ame*, p. 102).

gendi hujusmodi legibus minime regitur. Nam, *(a)* quo clarius et sæpius objectum ei proponitur, eo melius illud penetrat et cognoscit, eoque aptior evadit ad alia et difficiliora cognoscenda; ac, nisi ejus exercitium impediatur per accidens, senectute acrior et expeditior se exhibet, tuncque reflexione, prudentia, judicii ac consilii maturitate excellit.[1] «Animæ rationalis operatio (inquit **S. Bonaventura**) nec senescit, nec antiquatur tempore, immo juvenescit, quia in antiquis est sapientia et in multo tempore prudentia ».[2] *(b)* Circa suum objectum non pure passive

[1] The temporary in capacitation of the senses consequent on powerful stimulation is a common experience embalmed in such popular expressions as «a deafening noise», «a blinding flash», «a numbing pain», etc. . . The reason for this momentary loss of the power to react normally is evidently due to the organic nature of the senses. Their activity. . . involves a commensurate process of decomposition in the neural tissue, which must afterwards be compensated by a corresponding assimilation of nutrient material, before the sense can again react with its pristine vigour. . .

With the intellect, however, the case is quite different. The intellect is neither debilitated nor stupified by the discovery of truths that are exceptionally profound, . . . Nor is it temporarily incapacitated thereby from understanding simpler truths. On the contrary, the more comprehensive, the more penetrating, the more conspicuous, the more sublime our intellectual vision is, so much the more is our intellect invigorated and enthused in its pursuit of truth, and its knowledge of the highest truths renders it not less, but more, apt for the understanding of simple and ordinary truths. Obviously, then, the intellect is not bound to the organism like the senses, but has for its subject a spiritual principle that is intrinsecally independent of the organism—(**Barry-O'Toole**, *op. cit.*, p. 227).

[2] The materialist objection that the powers of the mind increase with the growth of the body, and suffer with its decay, only confirms what has been said. The intellectual faculties slumber alike in infancy and in old age, because at the beginning of life the organs which supply the matter of thought, the impression from the outer world, have not developed, while at life's close they have decayed. At the same time there are striking instances of intellectual power remaining unimpaired, or even intensified in extreme age and after prolonged illness, for instance, Isocrates, Sophocles, Plato, Humboldt, Goethe *(quibus placet addere Leonem XIII.)*. This calm and clear perception, noticeable in many dying persons when sensation is almost extinct, proves the independence of the soul in man. «One most important gain in this increased calmness (in old age), this tranquil, cloudless sky of the years when desire and passion are past, is that the reflective powers are clearer, stronger, more sustained, and more entirely dominate the soul. The

se habet, sed illud multipliciter revolvit, analysi dividit, synthesi componit, ac cum aliis objectis confert, ut novas de illa cognitiones acquirat et suam scientiam exinde augeat. *(c)* Ope cognitionis sensibilis assurgit ad cognitionem rerum supersensibilium (Dei, infinitatis, causalitatis), et concludit ad res sensibiles, quæ nullam possunt in nobis vim sensibilem exercere.[1]

III. — Juxta materialistas, facultas, quæ dicitur *intellectus,* est organica, cujus organum est cerebrum; *atqui* hæc

intellectual horizon is enlarged, and the mind more exclusively occupied by an absorbing interest in every sphere of knowledge, which quenches all other desires and needs» (Humboldt). «How frequently», says the physician Lauvergne, «does not the precision, calmness, and clearness with which the dying express their last wishes fill the bystanders with admiration? How is it that on the very verge of the grave a man is morally so strong that he appears to rise above his former self; that in his extreme distress, he seems suddenly endowed with such a sense of prudence; that he has such a clear recollection of words and persons long forgotten or absent; the gift of music, numbers, architecture; the sense of comparison, of metaphysics, of religion, of God: such energy of character? Why is this? We have already answered; the soul freed from the bonds of matter, then appears as it really is, in all its beauty or deformity» — (**Hettinger**, *loc. cit.*, p. 191).

[1] With no mere figure of speech we are compelled to say, every mind. . . transcends completely not only the powers of the cerebral mechanism by springing into another order of phenomena, but also the very existence, as it were, of that mechanism by passing into regions of space, time, causality, and ideality, of various kinds, where the terms that apply to the existence and activity of the cerebral centres have absolutely no meaning whatever. For example, the human mind anticipates the future and predicts on a basis of experience in the past, the occurrences which *will* be but are not now. . . Moreover, all suprasensuous knowledge, as such, enforces the same conviction as to a potential independency of the mind, inferred upon the basis of an actual experience with mental activities in the way of transcending the sphere of the correlated being and activities of the brain. For all (suprasensuous?) knowledge is of the *universal.* In knowing, the mind moves in the sphere of so-called law, of «genera», and «species», of «relations common» to many individuals of the «categories», but the existence of the brain is never more than concrete and individual; its being is at every instant precisely such and no other — so many countless atoms of oxygen, hydrogen, nitrogen, etc., combined in precisely such proportions — (**Ladd**, *Phil. of the Mind*, p. 400, apud *Maher*, p. 471).

doctrina nullo argumento *a priori*, nullo facto *a posteriori*, stabiliri potest; *ergo*.

Prob. min.—*Non a priori*, tantum enim abest, ut suppetat ullum principium rationis ad probandum intellectum esse organicum, ut plura adsint ad evincendum eum non esse organicum (cf. *arg.* I. II.).

—*Non a posteriori*. Materialistæ ipsi fatentur nullum indicium operationis intellectualis reperiri in cerebri cellulis aut in nervorum vibrationibus, aut in aliis materiæ organicæ motibus; cerebri quidem mutationes comitantur intellectionem, sed eam non constituunt, sicut motus materiæ non constituunt vegetationem vel sensationem *(Th. xxi)*.[1]

[1] « If we knew », says Griesinger, « all that goes on in the brain when it is at work, if we could see every detail of its chemical and electrical processes, how would it help us? Oscillations and vibrations, chemical and electrical processes, are not mental images » — (**Hettinger**, *loc. cit.*, p. 220).

The passage from the physics of the brain to the corresponding facts of consciousness is inconceivable as a result of mechanics. Granted that a definite thought, and a definite molecular action in the brain, occur simultaneously: we do not possess the intellectual organ, nor apparently any rudiment of the organ, which would enable us to pass, by a process of reasoning, from the one to the other. They appear together, but we do not know why. Were our minds and senses so expanded, strengthened, and illuminated, as to enable us to see and feel the very molecules of the brain; were we capable of following all their motions, all their groupings, all their electric discharges, if such there be; and were we intimately acquainted with the corresponding states of thought and feeling, we should be as far as ever from the solution of the problem, «How are these physical processes connected with the facts of consciousness?» The chasm between the two classes of phenomena would still remain intellectually impassable. Let the consciousness of love, for example, be associated with a right-handed spiral motion of the molecules of the brain, and the consciousness of hate with a left-handed spiral motion. We should then know, when we love, that the motion is in one direction, and, when we hate, that the motion is in the other; but the «*why?*» would remain as unanswerable as before — (**Tyndall**, *Fragments of Science*, v. ii., p. 87).

Whatever changes take place in the sensiferous apparatus are continuous with, and similar to those which take place in the external world. But, with the sensorium, matter and motion come to an end; while phenomena of another order, or immaterial states of consciousness, make their appearance – (**Huxley**, *Science and Culture*, p. 260).

268. **Cor. 1.** Ergo repudianda est opinio *Lockii,* juxta quem non videtur absolute impossibile, ut ens pure materiale cogitet *(Essay concerning Human Understanding,* B. 4, c. 3). Nam, quantumvis limitata sit nostra scientia potentiæ divinæ et proprietatum, quæ materiæ conveniunt, pro certo scimus omnipotentiam non posse efficere, ut idem omnino ens attributis mutuo pugnantibus constet; *atqui* ex argumentis allatis certum est principium cogitationis (tum quia objecta immaterialia et universalia attingit, tum quia ad suiipsius naturam perscrutandam redire potest), ornari attributis attributis materiæ regione oppositis. Jamvero, quum operatio nequeat excedere perfectionem sui principii, cogitatio, eo quod versatur circa immaterialia, est et ipsa immaterialis et exposcit principium *immateriale;* eo quod ad naturam sui principii investigandam redire potest, exposcit principium *simplex* et *a materia independens.* Nec valet provocare ad materiam apte dispositam et organizatam, quum talis materia necessario maneat composita et in suis attributis immutata, cui proinde vis cogitandi competere nequit (cf. *Liberatore,* Psych., pp. 288-295).

Cor. 2. Ergo operationes intellectivæ non *subjective* et *intrinsece,* ut opinantur sensistæ et materialistæ, sed *objective* et *extrinsece* pendent ab organismo: — *non subjective,* quia nullum organum concurrit ut causa partialis ad actum intellectivum eliciendum; *objective,* quia cerebrum, ope phantasmatis, intellectui offerre debet *objectum,* ex quo intellectus abstrahat speciem intelligibilem, qua ad actum intellectionis determinetur. Hæc igitur dependentia est omnino extrinseca ipsi intellectioni; et ideo non impedit, quominus dicamus intellectum solum, nullo modo cerebrum, actum intellectionis elicere.[1]

[1] In asserting that the intellect is a spiritual faculty, we do not of course imply that it is in no way dependent on the organism. . . It is indisputable that exhaustion of brain power accompanies the work of thinking: but the fact that the exercise of imagination or of external sense forms a ***conditio sine qua non*** of intellectual activity, accounts for such consumption of cerebral energy. Although intellect is a spiritual faculty of the mind, it presupposes, so long

269. **Schol.** Materialistæ, ut ostendant intellectionem a cerebro exerceri, varia finxerunt systemata, quæ systema *phrenologicum* seu *cranioscopiam, systema anguli facialis, physiognomoniam* vocant, de quibus universim dicendum est ea, quæ proferunt, etiamsi vera ac certa essent, minime favere materialismo; tantum enim evincerent intellectum in suis operationibus aliquo facultatis organicæ concursu indigere.

270. **Phrenologia.** Juxta hoc systema diversæ cerebri partes sunt organa, in quibus resident diversæ facultates perceptivæ. *(a)* Organa illa dignoscuntur ex variis prominentiis, quæ externe in cranio se manifestant. *(b)* Secundum gradum evolutionis, quem hæ prominentiæ attingunt, judicandum est de perfectione facultatum, quas includunt. *(c)* Si quis igitur noverit partem cranii unicuique facultati propriam, is poterit ex protuberentiis earumque conformatione ac dimensione judicium sumere de diversis aptitudinibus ac propensionibus, quas quisque possidet.

Contra hoc systema, jam fere obsoletum, sufficiat notare *(a)* illud attendere ad solum volumen cerebri, prætermittens ejus qualitates physicas, chimicas, vitales, quæ tamen in facultates influxum exercere debent.[1] *(b)*

as the soul informs the body, the stimulation of the organic faculty of sense. This was expressed in the language of the schools by saying that intellectual activity depends *extrinsically* or *per accidens* on the organic faculties. The universal concept, the intellectual judgment, the act of reflection, are not, like sensation, the results of stimulation of a sense-organ, but products of purely spiritual action. The inferior mode of mental life is awakened by the irritation of sentient nerves, the superior activity is due to a higher reaction from the unexhausted nature of the mind itself; and the ground for this reaction lies in the fact that the same indivisible soul is the root of both orders of faculties — (**Maher**, *Psych.*, p. 241).

[1] As a general rule, great intellectual power is associated with a large and heavy brain. Unfortunately, however, this is by no means an invariable rule, for instances are not wanting in which the brain representing superior intellect has not only not surpassed another lower in the intellectual scale, but has fallen below it. Allowing for such exceptional cases, there are some general results of obvious importance. The mass and weight of the brain are not in themselves sufficient tests, for these sometimes belong to a di-

Contra experientiam supponit organa et facultates locari in cerebri superficie; physiologi enim affirmant partes cerebri auferri posse, quin homo ullam perdat facultatem; functio enim, quæ in una parte exerceri solet, potest, hac parte remota, ab alia parte suscipi.[1] *(c)* Non modo non gaudet certitudine, sed ne probabilitate quidem, tum quia fautores ejus non concordant circa numerum situmque organorum, tum quia factis omnino certis refragatur; quandoque enim organa quibusdam propensionibus assignata, desunt iis, qui has propensiones manifestant, adsunt iis, qui talibus carent.[2] *(d)* Etiamsi ad determinatam cranii cerebrique conformationem responderet determi-

seased organ, and are in reality often symptoms of disease. Quality of brain must, therefore, be considered as well as bulk. Besides, it is clear that mass and weight of brain vary in some degree proportionately to the size and weight of the body. . . Proportion between brain and body must therefore also be considered, as well as mass or weight in itself — (**Calderwood**, *The Relations of Mind and Brain*, p. 20).

[1] It is a known fact that cerebral diseases, apoplexy in particular, diminish in their symptoms after a certain time, at least to a certain extent, and it is also known from experimental work that defects in the brain caused by a localised operation, are followed by sensorial and motorial defects, but that these defects become smaller and smaller as time advances until a certain maximum of regulation is reached. It is highly probable that this regulation, in part at least, is due to the fact that some typical nervous connections in the brain, which had been destroyed by the apoplexy or by the operation are restored after a while: not, of course, morphologically, for there is no actual restitution or regeneration of any sort in the brain of vertebrates, but physiologically, in the sense that the functional connection between the parts A and B is now, after the destruction of the shortest route, accomplished by some other of the many possible routes — (**Driesch**. *Science and Philosophy of the Organism*, v. ii., p. 91).

Even in the highest mammals, the brain is not absolutely indispensable in the production of phenomena that are looked upon as psychological — (**De la Vaissière**. *Experimental Psych.*, p. 101).

[2] « On s'amuse beaucoup de découvrir l'organe de la *vénération* et celui du *meurtre* très développés chez le mouton, l'instinct de la *propriété* très saillant chez le voleur et les bandits de profession. . . . Et l'admiration ne fut pas moindre, lorsqu'on apprit que la bosse de la *musique*, chez l'âne, le loup et le mouton, était beaucoup plus développée que chez l'alouette et le rossignol »—(**Farges**. *Le Cerveau, l'Ame et les Facultés*, p. 187).

natus gradus intelligentiæ vel specialis aptitudo, factum illud tantum probaret phantasiam, cujus organum est cerebrum, in quibusdam hominibus melius adaptari ad materiam intellectui subministrandam.

271. **Systema anguli facialis.** Hoc systema vim cognoscitivam tum hominis tum bruti dimetiri conatur ex angulo, qui efficitur intersectione duarum linearum, quarum una ducitur a cavernula auris ad basim narium, altera a prominentiori parte frontis ad dentes incisores. Quo major est angulus sic efformatus, opinavit *Camper,* systematis auctor, eo acrior est vis cognoscitiva, quia versus frontem major est quantitas cerebri, quæ in operationes intellectuales influit.

Quod generatim major angulus facialis sit indicium favens ingenio haud difficile admitti potest, tum quia evolutio cerebri frontalis multum confert, ut phantasia suum officium erga intellectum melius obeat, tum quia, ut observatione constat, quo stupidiora sunt animalia, eo angustior solet esse angulus facialis.[1]

Falsum autem dicendum est systema, *(a)* quatenus docet intelligentiam semper servare proportionem cum an-

[1] The high forehead stamps the human face as something more than material. Since the days of Camper the relation between forehead and jaw has been regulated by the facial angle, the lines which pass over the highest part of the forehead and the middle of the orifice of the ear and meet in the upper front teeth. In normal skulls the facial angle varies from 75° to 85°. In the Caucasian race 95° is not infrequent, while in the races lower down in the scale and in idiots the average falls as low as 70°. . . The lowest outside limit must be set down as 64° The facial angle averages 35° in a full-grown chimpanzee and 30° in the orang-outang — (**Schanz**, *A Christian Apology,* v. i., p. 199).

Although the more complete investigation of the connection of cerebral development with the extent of the intellectual faculties was reserved for modern investigators, it does not appear to have escaped the notice of the ancients, who evidently saw in the facial angle an index of intelligence. Not only do we find in their writings an erect frontal line noticed as a mark of a generous nature and an essential character of beauty, but the ancient sculptors conferred on the figures of their heroes and their gods a facial angle much larger than is ever seen in man — (**Lardner**, *Museum of Science and Art,* v. viii., p. 55).

guli facialis magnitudine; exceptiones enim abundant;[1] *(b)* quatenus de cerebri qualitate et dispositione, quæ præceteris magis afficiunt operationes intellectuales, nullam rationem sumit; *(c)* quatenus proponitur ut systema contra intellectus immaterialitatem.

272. **Physiognomonia**. Hujus est ex corporis formatione, potissimum ex lineamentis vultus, detegere aptitudines et dispositiones intellectus et voluntatis. Patet tale systema per se nihil habere, quod materialismo favet aut rectæ rationi repugnat. Immo, ob intimam unionem animæ et corporis, et concursum utriusque in operationibus intellectivis et sensitivis, necnon ob facta inductionis, non est cur non admittatur, si ad meras dispositiones restringatur, sicut illud admiserunt plures philosophi insignes (v. g., *Plato, Aristoteles, Albertus M., S. Thomas*). « Notam vero singularitatis et temeritatis non effugeret, qui semper et in omnibus virtutes et vitia e signis exterioribus auspicari vellet. Nam anima, quantumvis corpori unita et ab eo dependens, libera tamen manet quoad habitus contrahendos. Hinc est cur de facto tot exceptiones regulis præjactis afferantur, juxta axioma: « Ninium ne crede colori » (**Farges**, *Psych.*, p. 238).

273. Obj. 1. — Caput non minus fatigatur studio profundo et diuturno scientiæ abstractæ (*v. g.*, puræ mathematicæ), quam fatigatur phantasia, quando occupatur circa proprium suum objectum: *ergo* intellectus, sicut phantasia, est facultas organica.

Resp. — *Dist. antec.* Caput tunc fatigatur, quia phantasia toto illo tempore conatur res abstractas, quas mens revolvit, modo sensibili exhibere, *conc.*; caput fatigatur ob ipsam intellectus operationem *qua* talem, *neg.* Pariter *dist. cons.* Intellectus in statu præsenti non operatur absque prævia et concomitante phantasia operatione, *conc.*, est in se facultas organica, *neg.*

Omnes experimur, dum mentem applicamus ad considerationem rerum immaterialium, animam sibi obversari imagines corporeas, quibus tamquam exemplis juvetur ad cognoscendas res incorporeas. Hæc intensa vel diu continuata operatio, qua phantasia imagines

[1] « Bien loin d'être un privilège exclusif des hommes intelligents, le front droit ou bombé se rencontre très souvent dans des races inférieures ou sauvages, *v.g.*, chez les nègres d'Afrique et même chez les idiots » — (**Farges**, *Le Cerveau*, etc. p. 187).

efformat et sustinet, est causa, cur caput fatigatur.[1] « Si in operatione intellectus accidit fatigatio aut impedimentum propter infirmitatem corporis, hoc non est propter debilitatem virium ipsius intellectus, sed propter debilitatem virium, quibus intellectus indiget, *scil.*, imaginationis, memorativæ et cogitativæ virtutum » (**S. Th.**, *C. Gent.*, 1. 2, c. 79).

Obj. 2. — Intellectus in suis operationibus a sensibus dependet *(nihil est in intellectu, quod prius non fuerit in sensu)*. Quod experientia comprobatur : qui enim sensu aliquo orbatus nascitur, ideam qualitatis illi sensui propriæ numquam potest sibi comparare. *Atqui* tanta dependentia probat intellectum esse organicum : *ergo*.

Resp. — *Trans. maj.* ejusque *prob. Dist. min.* . . probat intellectum in statu unionis indigere concursu sensuum, *conc.;* . . . probat intellectum esse facultatem intrinsece dependentem a materia seu organicam, *neg.*

Dictum in *majori* citatum non significat intellectum non posse ullam rei notam cognoscere, quæ prius a sensibus non fuerit cognita : sed significat intellectum non posse, saltem naturaliter, efformare ideas universales et abstractas circa objecta materialia, nisi prius hæc ipsa objecta a sensibus cognoscantur ; quæ dependentia intellectus a sensibus debetur unitati principii, ex quo omnes facultates dimanant, et naturali subordinationi virium inferiorum ad vires superiores.

Obj. 3. — Inter operationes intellectus et operationes phantasiæ non est major differentia, quam inter operationes phantasiæ et sensationes externas ; nam sicut intellectus vi abstractiva objecta per phantasiam repræsentata sub quadam forma universali concipit, ita imaginatio simili vi abstractiva gaudens objecta per sensus apprehensa sine qualitatibus determinatis quodammodo exhibet. *Ergo* intellectus, sicut phantasia, est facultas organica.

Resp. — *Neg. antec.* et *paritatem* ad illud probandum adductam. Abstractio enim intellectiva objecta per phantasiam repræsentata liberat ab omnibus notis concretis et omnibus limitibus eaque concipit præcisa a conditionibus sensibilibus et individualibus, et proinde ut vere immaterialia et universalia ; abstractio autem quam exercet phantasia, semper relinquit suum objectum forma-

[1] Brain-fag is due to the activity of the imagination rather than that of the intellect. That such is the case appears from the fact that after the initial exertion, which results from the imagination being forced to assemble an appropriate and systematised display of illustrative imagery as subject-matter for the contemplation of the intellect, the latter is henceforth enabled to proceed with ease along the path of a given science, its further progress being smooth and unhampered — (**Barry-O'Toole**, *op. cit.*, p. 229).

liter concretum et individuatum accidentibus rerum materialium propriis.[1] Unde sicut intellectus præscindit ab omni materia et materiali conditione, et phantasia non præscindit, intellectus secus ac phantasia, est facultas immaterialis.

Obj. 4. — Omnis facultas, quæ objecto materiali movetur ad agendum, est materialis, siquidem in facultatem immaterialem agere nequit objectum materiale; *atqui* intellectus objecto materiali movetur ad agendum; percipit enim corpora, nec sine speciebus exinde habitis agere potest; *ergo*.

Resp. — *Dist. Maj.* Omnis facultas, quæ objecto materiali in ipsam immediate agente movetur ad operandum, est materialis, *conc.*; nonnisi mediate in ipsam agente, *neg. Contradist. min. Dist. prob. additam.* Intellectus percipit corpora mediantibus speciebus sensitivis illi impressis, *neg.*; mediantibus speciebus intellectivis, quæ a phantasmatibus abstrahuntur, *conc.*

§ 2. De Diversis Intellectus Nominibus.

274. Intellectus pro diversitate suarum operationum et aptitudinum diversa sortitus est nomina. Sic: —

1°. Dicitur *(a) intelligentia* (intellectus principiorum) quatenus veritates per se notas cognoscit; *(b) ratio,* quatenus ex principiis ad conclusiones discurrit; *(c) memoria,* quatenus suas cognitiones conservat et ut quondam habitas recognoscit.

2°. Dicitur *(a) intellectus speculativus,* quatenus sistit in veritate cognita ut suiipsius perfectiva; *(b) intellectus practicus,* quatenus veritatem cognitam ordinat ad aliquod opus perficiendum.

3°. Dicitur *(a) ratio superior,* quatenus per æterna cognita de temporalibus judicat ac disponit; *(b) ratio inferior,* quatenus per temporalia cognita ascendit ad æterna contemplanda. « Temporalia et æterna comparantur ad cognitionem nostram hoc modo, quod unum eorum est medium ad cognoscendum alterum. Nam secundum viam

[1] The representations of our imagination, as for example the imaginary picture of a man, are essentially different from intellectual ideas which exhibit what is essential and common to a whole class, as for instance the *universal idea of man*. An imaginary picture of man, though ever so hazily formed, has always a definite shape. The picture may vary in the fleeting imagination, but at any given time the picture of a man has definite shape, colour, dimensions, etc. — (**Gruender**, *op. cit.*, p. 151).

inventionis, per res temporales in cognitionem devenimus æternorum, secundum illud Apostoli *(Rom.* c. 1.): *Invisibilia Dei per ea, quæ facta sunt, intellecta conspiciuntur.* In via vero judicii, per æterna jam cognita de temporalibus judicamus, et secundum rationes æternorum temporalia disponimus» (S. Th., 1, q. 79, a. 9).

4°. Dicitur *(a) conscientia (psychologica,* consciousness), quatenus operationes nostras subjectivas ut præsentes et ut nostras cognoscit; *(b) conscientia (moralis,* conscience) quatenus pronuntiat de convenientia vel discrepantia actuum nostrorum cum lege morali; *(c) synteresis* (συντήρησις, repositorium), quatenus possidet habitualem cognitionem universalium principiorum practicorum in genere morum[1]. Cujusmodi sunt: bonum est faciendum, malum vitandum, Deus est colendus, nemini nocendum.

§ 3. De Intellectus Objecto.

275. **THESIS XXVII — Objectum formale adæquatum intellectus humani est omne ens; objectum formale proportionatum sunt rerum essentiæ: tamen in statu præsenti objectum proportionatum sunt essentiæ rerum sensibilium.**

Stat. Quæst. — Objectum intellectus distinguitur in adæquatum et proportionatum. Objectum *adæquatum* est illud, ad quod potentia aliquo modo extenditur, et ultra quod extendi nequit, seu, id, quod intellectus utcumque attingere potest, « sive naturaliter sive supernaturaliter, sive directe sive indirecte, sive per proprias species sive per alienas, sive prout est in se, sive solum per ordinem et comparationem ad alia; ideoque *complectitur totam sphæram activitatis intellectualis* » (Urráburu, *Psych.*, v. ii., p. 792).

Objectum *proportionatum* intellectus, *ut talis,* sunt ea omnia, quæ intellectui, ut tali, ita accommodantur, ut ab ipso ad actum reducto directe et per propriam speciem apprehenduntur. Apprehendi « per propriam speciem »

[1] Synteresis est «lex intellectus nostri, quantum est habitus continens præcepta legis naturalis, quæ sunt prima principia operum humanorum» — (S. Th., 1, 2, q. 94, a. 1, ad 2).

significat ita in cognitione repræsentari, ut notæ propria rei exhibeantur, quales in se sunt. Huic opponitur cognitio « per speciem alienam », qua rei notæ exhibentur, non quales in se sunt, sed quales ex aliis rebus innotescunt, ut quum perfectiones divinas quasi distinctas apprehendimus, quia noscuntur per analogiam ex præcognitis creaturarum perfectionibus vere distinctis. Itaque, objectum proportionatum nostri intellectus est illud, quod ipsi accommodatur, *prout est facultas animæ corpori intime unitæ*.[1] Quæ voces ideo adduntur, quia animæ separatæ, sicut ad modum spiritus puri existunt, ita ad modum spiritus puri intelligunt, et objectum tali statui proportionatum nanciscuntur. Voces « essentiæ rerum sensibilium » ita intelligendæ sunt, ut complectantur non modo substantias, sed etiam accidentia; hæc enim omnia habent id *(scil.*, essentiam), quo in suo proprio ordine constituuntur.

Hæc thesis ex una parte confirmat præcedentem de intellectus natura spirituali, et ex altera parat mentem ad intelligendam et solvendam quæstionem de idearum origine.

276. **Prob. Thesis.** Pars 1ª. *(objectum adæquatum est ens).* **Arg.** —Objectum adæquatum facultatis cognoscitivæ dicitur illud, quod talis facultas quocumque modo cognoscere potest; *atqui* intellectus humanus habet intrinsecam aptitudinem ad cognoscendum, saltem imperfecte et per modum negationis et analogiæ, quidquid habet rationem entis; *ergo*.

Prob. min. 1°. *a priori*. Fons, unde derivatur capacitas cognoscendi, est facultatis elevatio supra conditiones ma-

[1] Although the formal object of intellect embraces all forms of *being*, yet the *human* intellect has for its connatural, immediate, or proportionate object, the abstract and universal essences of sensible or material things. The *connatural* object of a faculty signifies that towards which it directly tends, as opposed to that which it can cognize only mediately and indirectly, or by analogy. God and other pure spirits are thus not the connatural object of the human intellect. They are known not by intuition, but by inference and analogy; whilst our earliest intellectual ideas are all of sensible objects — **(Maher, *Psych.*, p. 306).**

teriæ ; et quo major est ejus elevatio, eo major est vis cognoscendi.[1] *Atqui* intellectus, quum natura sua sit immaterialis et nullo organo utatur (n. 264), ad nullum genus entis in suis operationibus restringi potest, et proinde omnia, in quibus ratio entis reperitur, cogitare et investigare valet, dummodo rite ei proponantur.

2°. *a posteriori*. Nulla datur entitas, quam, teste experientia, intellectus humanus aliquo modo (saltem ut ens) non assequatur apprehendendo, judicando, ratiocinando. Et quidem, disputat de mundo corporeo deque proprietatibus et naturis diversarum ejus partium et elementorum; seipsum perlustrat ac cum aliis nostris facultatibus comparat ; naturam angelicam et divinam frequenter cogitat, et de earum perfectionibus judicia efformat ; possibilia suo calculo computat ; immo privationes, negationes, ipsaque impossibilia per notas oppositas sat distincte attingit.

277. Pars 2ª. (... *essentiæ rerum*). **Arg.**—Primaria tendentia intellectus manifestat proprium et proportionatum ejus objectum; illud enim est facultatis cognoscitivæ proportionatum objectum, quod per propriam speciem, ideoque non in alio nec ex alio prius cognito, cognoscitur. *Atqui* primaria tendentia intellectus est, ut quærat essentiam objecti sibi propositi, seu, ut quærat *quid* res sit. Quod constat 1°. *a priori;* nam ad intellectum, ut intellectus est, pertinet in intimam rei quidditatem penetrare, seu *intus legere,* i.e., apprehendere notas, quæ intus latent et aciem sensuum effugiunt; hæ autem non aliæ sunt quam notæ essentiales. 2°. *a posteriori;* etenim simul atque quodlibet objectum sensus afficit, conscii sumus intel-

[1] « Immaterialitas alicujus rei est ratio quod sit cognoscitiva » — **(S. Th.**, 1. q. 14, a. 1).

« Secundum ordinem immaterialitatis in rebus, secundum hoc in eis natura cognitionis invenitur. . . . Sensus recipit species sine materia, sed tamen cum conditionibus materialibus ; intellectus autem etiam a conditionibus materialibus species depurgatas recipit » — *(Q. Disp.,* XI. q. 2. a. 2).

« Quanto aliqua vis cognoscitiva est immaterialior, tanto est perfectior in cognoscendo » — *(Meta,* 1. 1, lect. 1).

lectum, natura impellente, ferri ad talis rei quidditatem quærendam.

278. Pars 3ª. *(. . . essentiæ rerum sensibilium).* **Arg. I.** —Objectum proportionatum intellectus in statu præsenti debet respondere modo existendi, quem intellectus hic habet; secus deesset debita proportio inter facultatem et objectum. *Atqui* intellectus humanus, licet immaterialis sit, est facultas animæ, quæ non modo intellectiva est, sed etiam sensitiva, et simul cum corpore unam substantiam constituit. *Ergo* licet intellectus in statu præsenti essentias cognoscat, eas tamen non cognoscit primo et per se nisi in rebus sensibilibus.

II.— Omnes ideæ, quas intellectus humanus potest in hac vita acquirere, aliquam necessariam dependentiam a phantasmatibus manifestant; *atqui* talis dependentia signum indubium est essentias rerum sensibilium esse intellectus proportionatum objectum; si enim ejus objectum essent essentiæ rerum spiritualium, sponte, per se et directe, absque ulla a phantasmatibus dependentia ad eas cognoscendas ferretur. *Ergo* essentiæ materialium, non spiritualium, sunt ejus proportionatum objectum.

Expl. maj. 1°. Qui nativam alicujus sensus orbitatem patitur, caret omni cognitione ad illius sensus objectum pertinente, *v.g.*, cæcus a nativitate nullam sibi efformare potest notionem coloris, nec surdus notionem soni.

2°. Videmus quod, læsa vel deleta cerebri parte, quædam ideæ prius habitæ evanescunt; et, phantasia perturbata, ideæ quoque mentis perturbantur, ut accidit in phreneticis.[1]

[1] Two facts are certain: that the brain is the necessary organ for the formation of phantasms; and that in the present life the phantasm is a necessary *condition* for thought. These two facts suffice to explain fully the dependence of our mental activities on the attitude and co-operation of the cerebro-spinal axis. Since in the formation of phantasms, the central nervous system must necessarily be brought into action, and since no organic activity is performed without a chemical transposition of the molecular constituents of the organ, thought itself is not produced without a simultaneous change in the cerebral substance. Consequently, a derangement in the brain is necessarily followed by a disturbance

3°. «Hoc quilibet in seipso experiri potest, quod quando aliquis conatur aliquid intelligere, format sibi aliqua phantasmata per modum exemplorum, in quibus quasi inspiciat quod intelligere studet. Et inde est etiam quod, quando aliquem volumus facere aliquid intelligere, proponimus ei exempla, ex quibus sibi phantasmata formare possit ad intelligendum» (S. Th., 1, q. 84, a. 7).

4°. Deum ipsum aliasque res spirituales cognoscimus ope phantasmatum rerum materialium, per quasdam similitudines, analogias vel comparationes ad objecta, quæ habent phantasmata propria.[1]

279. Cor. 1. Ergo id, quod in suo objecto proportionato intellectus primo et per se cognoscit, non est nisi «universale»; quia quidditas rei materialis, quum præscindat a conditionibus sensibilibus et individuantibus, est sane aliquid universale. In cognitione vero universalium, intellectus prius cognoscit universaliora, ut inde deveniat in cognitione minus universalium. Ipse enim, sicut omnis alia facultas, in sua operatione transit de potentia in

in the phantasy which, in its turn, interferes with the working of the intellect — (Fell, *The Immortality of the Soul*, p. 9).

[1] St. Thomas calls the representations of the imagination *phantasmata*, and says that as long as the soul is united to the body we cannot understand except *per conversionem ad phantasmata*: that is, unless the representation of the imagination which serves as material for the formation of the idea, and assists in clearing it up, and heightening its colours, precedes and accompanies the intellectual act. Experience teaches that whenever we understand, certain sensible forms, relative to the object which occupies us, exist in our imagination. Now, they are the images of the figure and colour of the object, if it have any; now, the images of those with which they are compared or the words which denote them in the language we habitually use. Thus, even in thinking of God, the very act by which we affirm that He is a most pure spirit, offers a kind of representation to the imagination under a sensible form. When we speak of eternity, we see the *Ancient of days*, as we often see Him represented in our churches; when we speak of the infinite, we imagine perhaps a sea of light; infinite mercy, we picture to ourselves a pitying likeness; justice, with angry countenance. To force ourselves to form some conception of the creation, we fancy a spring whence light and life both flow, and thus also we endeavour to render immensity sensible by imagining unlimited extension — (Balmes, *Fund. Phil.*, ii., p. 169).

actum, immo initio est in pura potentia respectu cognitionis; quidquid autem transit de potentia in actum, prius pervenit in actum incompletum, quam in actum completum. Intellectus vero ad actum completum pervenit, quando *distincte et determinate* cognoscit essentiam sibi propositam. Jamvero, cognitio universaliorum est minus distincta et determinata, quam cognitio minus universalium; quo enim universalior est noster alicujus rei conceptus, eo est indistinctior et imperfectior, et ideo, quo magis universalitas conceptus contrahitur, eo distinctior et perfectior evadit conceptus. Unde, cognitio universalium est actus incompletus, et proinde, *in ordine cognitionis intellectualis* eorum cognitio præcedit cognitionem individualium. Ex quo etiam sequitur ideam, quæ prima in nativa mentis nostræ explicatione formatur (non quidem explicite, sed implicite et confuse) esse ideam entis, quum hæc sit omnium universalissima et maxime indeterminata.[1] Quando igitur intellectus pro proportionato sui objecto essentiam rerum sensibilium habere dicitur, id minime intelligendum est, quasi intellectus specificas rerum essentias statim et per modum simplicis intuitionis percipit. Intellectus enim humanus (secus ac angelicus) nonnisi gradatim suam perfectionem acquirit, ideoque essentias rerum materialium primo cognoscit indeterminate; deinde, ope analysis, comparationis, ratiocinii, illas notas discernit, quæ specificam rei materialis essentiam constituunt.[2]

[1] « Illud quod primo intellectus concipit quasi notissimum, et in quod omnes conceptiones resolvit, est ens » (**S. Th.**, *De Verit.*, q. 1, a. 1).

The notion of *being* is the first which the human mind acquires. It is the most general since it applies to everything, hence also the most indetermined and the most imperfect. It is at the basis of all other notions, for, whatever is known, is known as something, *i.e.*, as some form of being — (**Dubray**, *Intro. Phil.*, p. 130).

[2] The student must be constantly on his guard against interpreting « essence » to imply all that is contained in « specific nature ». . . . Every positive answer to the question: What is that? reveals the essence. The answer may vary in definiteness from: « It is something », to « It is a dark-extended-four-footed-long-necked-humpbacked-hairy-skinned-self-moving-being ». The

280. Hic observa: 1°. Si cognitio *in genere,* et prout abstrahit ab ordine intellectivo et sensitivo, attenditur, prius a nobis cognoscitur particulare quam universale; nam quum cognitio intellectiva originem sumat a cognitione sensitiva, cognitio particularium per sensus præcedit cognitionem universalium.

2°. Processus a magis universali ad minus universale supra affirmatus spectat ad cognitionem directam et spontaneam, minime vero ad cognitionem reflexam et scientificam; sic, qui suas conclusiones in earum principia resolvit, non procedit a magis universali, sed e contra.

3°. Quum ideæ universalissimæ abstractione acquisitæ remaneant in intellectu repositæ, non est necesse, ut intellectus singulis vicibus ab eis incipiat; nam hoc pro prima tantum earum formatione requiritur; postquam enim mens illas semel formavit, eas jam semper habitualiter retinet, et nova earum generatione non indiget, sicut ad intelligendam veritatem longo discursu adeptam non indiget totum ratiocinium denuo contexere. Unde, sat est, ut mens ideas noviter obtentas cum ideis olim acquisitis et conservatis conferat, sicque ad alias magis distinctas et determinatas perveniat.

Cor. 2. Quum proportio existere debeat inter modum essendi facultatis ejusque objectum, dicendum est sensus, utpote intrinsecus a materia dependentes, pro objecto habere pure materialia; intellectum angelicum, utpote omnino a materia independentem, ut proportionatum objectum pure immaterialia habere; intellectum humanum, utpote in confinio materialium et immaterialium constitutum, ad immaterialia ex materialibus abstracta primo et per se cognoscenda esse ordinatum (cf. S. Th., 1, q. 85, a. 1).

former expresses the essence in its most indeterminate form; the latter approximates towards the conception of the specific essence of a camel. . . When it is said that the intellect abstracts the essence, this term must be understood in its widest sense: the more determined specific essence. . . is attained by observation, comparison, and induction — (**Maher**, p. 305).

§ 4. De Intellectuali Rei Corporeæ Cognitione.

281. Ex dictis colligitur objectum, ad quod cognoscendum intellectus noster directe fertur, esse essentias, et quidem in hac vita essentias rerum materialium. Non ideo tamen intellectus privatur cognitione individuorum, quod quidem haud difficile ostenditur. Nam *(a)* de individuis sæpissime loquimur; locutio autem est actus intelligenti proprius et mentis conceptionem exprimit. *(b)* Intellectus format judicia, quorum subjectum est res materialis (hæc *arbor* est substantia); *atqui* oportet utrumque terminum judicii ab intellectu cognosci, ut mutuam eorum relationem perspiciat.[1] *(c)* Voluntas plerumque tendit in individua, quæ ideo prius ab intellectu percipi debent; nihil enim volitum, quin præcognitum.

282. Quæstio igitur non est de *facto*, sed de *modo*, quo intellectus noster corporea singularia cognoscat. Ad quam quæstionem solvendam duplex profertur sententia. Prima tenet intellectum singularia directe cognoscere; quæ sententia pro se habet plures auctores, qui eam gravibus argumentis defendunt.[2]

Altera sententia, communior et probabilior, est: *Intellectus humanus, non directe sed indirecte, per quamdam, scil., reflexionem supra phantasmata, cognoscit individua corporea* (cf. *S. Th.*, 1, q. 86, a. 1).

283. Probatur. 1°. *Non directe*, quia si intellectus individua corporea directe cognosceret, intelligeret profecto eorum individuam quidditatem seu id, quo unumquodque constituatur *hoc* individuum et ab aliis ejusdem speciei distinguatur; sicut directe cognoscendo specifi-

[1] «Quod vero quidam volunt in tali propositione *(Petrus est homo)* subjectum esse in *cogitativa*, et prædicatum in *intellectu*, omnino est alienum a ratione: nam ubi, quæso, erit copula? aut quomodo una ipsa potentia poterit comparare prædicatum subiecto, nisi utrumque cognoscat?» — **(Suarez**, *De An.*, 1, 4, c. 3, n. 3.)

[2] Ita docent «Scotistæ, Suarez, Valentia, Toletus, Hurtado, Rhodes, Lossada, et alii, affirmantes intellectum directe et primo absque reflexione singularia materialia apprehendere posse» — **(Donat**, *op. cit.*, p. 168).

cam rerum quidditatem, discernit notas illius speciei constitutivas et distinctivas. Aliis verbis : intellectus, quum sua natura penetret ad cognoscendum in suo objecto *quod quid est,* valere debet in individuis, si hæc ad ejus objectum directum pertinent, cognoscere non solum eorum singularitatem in abstracto, sed etiam quænam sint notæ constitutivæ hujus et illius rei singularis, qua talis ; *atqui* has notas intellectus plane ignorat ;[1] quod quidem liquet ex eo quod nulla sint vocabula, quæ essentiam rei individuæ exprimunt ; nomina enim propria sunt arbitraria et sæpe pluribus communia. Præterea, si intellectus posset individua corporea directe cognoscere, eorum cognitio cognitionem universalium præcederet. Jamvero, intellectus, utpote facultas de potentia in actum procedens, prius pervenit in imperfectam rei cognitionem quam in perfectam (n. 279) ; *atqui* intellectualis cognitio rei individuæ est maxime perfecta : complectitur enim notas genericas, specificas, individuales. *Ergo* intellectus humanus non cognoscit directe res corporeas singulares.

284. 2°. *Per quamdam reflexionem super phantasmata.* Dicitur *quamdam,* quia duplex datur reflexio, altera proprie dicta, quæ habetur, quando potentia redit ad seipsam et suam propriam operationem contemplandam, ut accidit, quando intellectus suiipsius actum considerat ; altera minus proprie dicta habetur, quando potentia se convertit ad considerandum actum alterius potentiæ vel objectum ibi repræsentatum.

Jamvero, quum intellectus non possit intelligere, nisi se ad phantasmata convertat, eo ipso quod ope abstractionis directe cognoscit universale in phantasmate relucens, *indirecte* et quasi in obliquo cognoscit singulare exhibitum per phantasma, e quo extraxit speciem intelligibilem : « sicut fieri non potest, ut visus percipiat colorem in con-

[1] Et ratio est, quia intellectus per rerum actiones determinatur ad cognoscendum ; res vero corporea non habet actionem ab actionibus ceterarum rerum ejusdem speciei essentialiter distinctam, qua directe in intellectum agat, nec proinde potest intellectus talem rem corpoream directe cognoscere.

creto, quin indirecte et per accidens percipiat subjectum, in quo color perceptus existit » (Zigliara, *Psych.*, p. 310).

Rem ita se habere confirmatur experientia. Nam, quoties aliquod individuum designare volumus, adducere solemus notas externas (figuræ, coloris, etc.), quæ phantasia repræsentari solent, nec umquam possumus individuum cognoscere absque talibus lineamentis sensibilibus; quod factum explicari nequit nisi dicendo intellectum singularia cognoscere, prout hæc in phantasmate apparent. Unde, sicut sensus directe cognoscit accidentia, quæ sunt proprietates singulares rerum materialium, et indirecte dumtaxat harum rerum substantiam; ita, e contrario, in iisdem rebus intellectus directe cognoscit essentiam, quæ est universalis, indirecte vero ipsas res singulares.[1]

ART. II.

DE IDEARUM ORIGINE.

285. Intellectus, ut ex Thesibus xxvi. et xxvii. constat, est facultas ordinem sensibilem excedens: ejus namque objectum non est aliquid contingens, mutabile, singulare, sed quiddam necessarium, immutabile, universale. Quibus notis insigniuntur essentiæ, quas apprehendere est primarium munus intellectus. Nunc examinandum occurrit, quomodo intellectus humanus in sua cognitione evolvatur, quomodo scilicet determinetur et proxime aptus constituatur ad suum objectum cognoscendum: cuique enim compertum est intellectum initio vitæ cognitione prorsus carere, et nonnisi paulatim decursu temporis plus minusve perfici. Circa hujus quæstionis solutionem multæ et ab invicem valde diversæ exortæ sunt (præsertim in sæculis jam proxime elapsis) sententiæ, quæ uberrimam errorum segetem produxerunt; hæ autem omnes ad quinque systemata reduci possunt, quæ sunt: *Sensis-*

[1] Tandis que la connaissance sensible des individus est antérieure à la connaissance intellectuelle des types génériques ou spécifiques, celle-ci est antérieure à la connaissance intellectuelle des individus. — (Mercier, *Psych.*, v. ii., p. 38).

mus seu *systema empiricum, systema idearum innatarum, traditionalismus, ontologismus, systema scholasticum.* Hoc ultimum systema, tamquam solum rationi et experientiæ internæ conforme, exponemus ac stabiliemus, ceteris tamquam falsis prius refutatis.

§ 1. Systema Empiricum.

286. THESIS XXVIII. — Sensismus impar est ad idearum originem explicandam.

Stat. Quæst. — Sensismus est systema, quod docet omnes ideas nostras non esse nisi sensiles repræsentationes diversimode modificatas vel transformatas.[1] Quod systema, cujus initia apud antiquos græcos reperiuntur, instauravit *Locke,* multoque elaboravit *Condillac.*

Locke originem idearum per *sensationem* et *reflexionem* explicare conatur. Ope sensationis ideas sensibilium acquirimus; ope reflexionis cognoscimus operationes animæ nostræ circa res externas. Ex sensu et reflexione simul proveniunt notiones existentiæ, potentiæ, voluptatis, successionis, etc. In his omnibus notionibus recipiendis, intellectus est pure passivus, nec aliud facere potest quam compositione conjungere, juxtapositione comparare, abstractione separare notiones sensibiles. Qua ex causa concludit Locke essentias rerum a nobis cognosci non posse *(Ont.,* n. 343).[2]

[1] *Sensism, sensualism* or *sensationalism,* is the very general theory that thought has not an object different from that of sentience and that accordingly sense-experience is quite adequate alone to account for all our so-called intellectual knowledge. It is also called *empiricism.* — (**Mercier,** *Manual,* v. i., p. 251).

[2] Locke starts with the rejection of innate ideas or innate principles in any form. The mind is originally a *tabula rasa,* a clean slate on which nothing is written. The sources of all our knowledge are extended sense-perceptions and reflexion or internal perception. *Nil est in intellectu quod non fuerit prius in sensu.* Knowledge consists in the perception of agreement or difference between our ideas. The ultimate elements of knowledge are ideas received through the senses. These aggregated in various ways form *compound* or *complex* ideas, which are divided into three classes. *modes, substances,* and *relations.* Ideas of *primary qualities* of bodies — extension, solidity, figure, etc., are like their objective correlates, but ideas of *secondary qualities,* taste, colour, etc.,

Data sensatione, inquit Condillac, anima excitatur ad attentionem, comparationem, judicium, reflexionem, imaginationem, ratiocinium, quæ omnia alia non sunt quam *sensationes transformatæ*. Hos nunc sequuntur positivistæ et evolutionistæ *(cf. Maher,* pp. 242 et 286).[1]

287. **Prob. Thesis. Arg.** — Conscientia testatur nos habere ideas, quæ neque per sensus possunt acquiri, neque ex sensuum perceptionibus educi eo modo, quem docent sensistæ. Revera, plurium conscii sumus idearum, quæ characteres *intelligibilitatis, universalitatis, necessitatis, ininitatis, immaterialitatis,* etc., præ se ferunt; *atqui* hujusmodi idearum origo explicari nequit in systemate sensistarum, quum sensus non cognoscant nisi *sensibilia, singularia, contingentia, finita, materialia,* etc. Haud juvat reflexio lockiana; hæc enim restringitur ad phænomena interna; quæ phænomena sunt singularia ac mutabilia, nec potest reflexio eorum naturam essentialem ita immu-

are not. By reflexion or internal sensibility we know our volitions and feelings. By internal and external sense combined, we form ideas of power, unity, and the like. *Substance*, the self-subsisting substratum which we imagine to be the support of the qualities of bodies, is a mental fiction. It cannot be apprehended by internal or external sense; but as we are unable to imagine that the ideas we perceive by our senses inhere in nothing, we suppose the existence of a substratum which binds them together — (**Maher**, *Psych.*, p. 271).

[1] The theory reducing all ideas to images has been and is still advocated, but as a more complete and more elaborate system. The main point which is insisted on, is the fusion of images by which, as in composite photographs, common features are made to stand prominent, while individual features are not apparent. There is thus a double process, dissociation and combination, the causes of which are either external and involuntary, especially the identity and dissimilarity of certain features, or internal, elective attention. This process. . . gives the abstract and general idea which represents only common features. This is *associationism* (Mill, Bain). Others say that the idea remains really concrete, but we look on it as abstract and general when it is expressed by a universal term. . . This is *nominalism* (Taine). Finally, the process may be completed by accumulating the experiences and associations, not only of the individual, but of his ancestors. . . This is *evolutionism* added to *associationism* (Spencer). And here, as in so many other instances, extremes meet, and this view comes near to innatism — (**Dubray** *Intro. Phil.*, p. 99).

tare, ut ex eis efformet ideas ordinem sensibilem omnino superantes; reflexio enim sua objecta, prout jam in cognitione existunt, intacta relinquit.

288. Cor. 1. Ergo sensistæ cognitionem nostram intra limites sensibilium coarctant; revera enim tollunt facultatem intellectivam, quam quoad nomen retinent. Nam idem philosophice sonat intellectum non differre a sensu, ac objectum intellectus non differre ab objecto sensus; ubi enim non habetur objectum formaliter diversum, ibi non habentur facultates formaliter diversæ.

Cor. 2. Ergo sensismus ad sequelas pessimas logice ducit, nempe, ad *materialismum, positivismum, certitudinis ordinisque moralis exitium.* Etenim *(a)* si in nobis non existit facultas, quæ notiones universales *causæ, substantiæ,* etc., comparare potest, pronum est concludere sensum et intellectum esse vires materiæ, et cognitionem, non secus ac operationes mechanicas, esse operationem materiæ, ipsamque animam a materia non esse realiter distinctam; qualis enim operatio, talis facultas; qualis facultas, tale ejus principium. *(b)* Positivismus vix plus quam nomine differt a sensismo. Juxta ejus fautores nihil a nobis cognoscitur, nisi quod experientia attingitur; unde quidquid excedit ordinem *positivum* (i. e., sensibilem) ut metaphysicum et proinde ut inane habendum est.[1] *(c)* Ad certitudinem requiritur cognitio veritatum necessariarum et universalium, quæ quum in hoc systemate non dentur, locus veræ certitudini non amplius manet. *(d)* Eo ipso, quod appetitio sequitur cognitionem, cognitio ad ordinem sensibilem limitata nos movere non potest ad aliud quam bonum sensibile prosequendum, ad aliud quam malum sensibile vitandum. *Atqui* prosecutionem boni sensibilis et fugam mali sensibilis ponere ut normam moralitatis, esse omnem moralitatem subvertere nemo non videt.

289. Obj. 1. — Scholastici, non secus ac sensistæ, docent omnem

[1] « Le positiviste prétend que l'expérience sensible conduit seule à la connaissance certaine. Or l'objet de la connaissance intellectuelle est, par définition, suprasensible. Le positiviste doit donc le juger inconnaissable » — (Mercier, *Psych.*, v. ii., n. 174.)

cognitionem humanam ab experientia oriri; *ergo* sensismus non est rejiciendus.

Resp. — *Dist. antec.* . . . docent omnem cognitionem humanam incipere ab experientia, et exinde intellectum progredi ad cognoscenda universalia et immaterialia, *conc.;* non admittunt ideas, quas experientia præstare nequit, *neg.* Scholastici cum sensistis in hoc conveniunt, quod docent nostras cognitiones a sensu originem sumere, in aliis autem toto cælo ab eis discrepant. Scholastici enim *(a)* « admittunt multisque demonstrant necessitatem virtutis longe altioris, quam est sensitiva; *(b)* negant objectum intellectualis cognitionis ad corporea et singularia limitari, vel ad experientiam sive externam sive internam; *(c)* docent abstractionem valde diversam a lockiana ad ideas vere universales efformandas: *(d)* agnoscunt virtutem, quæ non solum juxtaposita percipiat, sicut potest etiam brutum percipere, vel plures formas perceptas in unum conjungat, sicut efficere potest imaginatio, sed etiam in illis impervias sensibus adinveniat relationes et exinde alias et alias novas veritates ope ratiocinii detegat et concludat » — (**Urráburu**, *Psych.*, v. ii., p. 982).[1]

Obj. 2. — Intellectus initio suæ existentiæ est ut tabula rasa respectu cognitionum sensuum: *ergo* non cognoscit, nisi quod sensus prius cognoscebant.

Resp. — *Dist. antec.* Intellectus est ut tabula rasa, quia absque determinatione extrinsecus adveniente nullum actum cognitionis elicere potest, *conc.;* quia est facultas ex toto passiva, quæ nullam exercet activitatem circa objecta rite proposita, nec in eis cognoscit

[1] Locke's reflection is only a turning back of the mind on previous sensations, and likewise his abstraction is only a separation of the elements contained in the sensitive perception. Both, according to him, are cognoscitive acts. On the contrary, the abstraction by the *intellectus agens,* as taught by St. Thomas, is not a turning back on a previous act. It is a primary action in the intellectual order. It is not exercised in the way of cognition, but in the way of efficiency. It does not separate elements already apprehended in sensation, but discovers to the mind a new horizon unknown to the senses, *i.e.,* that of the essences or quiddities of things. St. Thomas' system (to epitomize the disparity by a comparison) represents the intellect as a canvas not yet painted on, but gives to it the colours and the artist. Locke not only presents to us the intellect as a canvas not yet painted on, but also denies the colours and the artist. . . The colours, according to him, would not be the quiddities or essences shining before the intellect only, but the sensations themselves to be worked and manipulated in diverse fashions. The artist would not be the intellectual light that makes visible to the intellect what is not perceived by sense. It would be sense itself transmitting its perceptions to the intellect—(**Liberatore**, ***On Universals,*** p. 169).

rationes, quæ acumen sensuum omnino effugiant, *neg.* Pariter, *dist. cons.* «Omnis metaphora claudicat», nam, ut docet *S. Thomas,* non oportet, ut id, quod est simile secundum unum, sit simile quantum ad omnia (2. *Poster., lect.* 16). Jamvero, intellectus duplici sensu accipi potest ut tabula rasa: primo, ut sit omnino passivus respectu specierum, quæ a sensibus offeruntur. Secundo, ut egeat sensibus, non ut causis ideas ipsi imprimentibus, sed ut mediis, quæ afferant materiam, circa quam ipse suam exerceat vim abstractivam, ibique detegat rationes immateriales, necessarias, immutabiles. Primo sensu sensistæ intellectum tabulam rasam vocant, altero autem scholastici post Aristotelem.

§ 2. Systema Idearum Innatarum.

290. THESIS XXIX. — Nulla datur idea innata; unde innatismus, quocumque modo propugnatur, est falsus.

Stat. Quæst. — Ideæ innatæ sunt, juxta hujus systematis patronos, *quædam formæ* seu *repræsentationes habituales quæ in anima ab ipsa ejus cum corpore unione impressæ latent, donec pro opportunitate excitentur et menti notæ fiant.* Ideo enim vocantur *innatæ,* quod eas mens non activitate sua effingit aut ab objectis accipit, sed *ex sua natura* extat determinata ad omnia vel quædam objecta repræsentanda. Hoc systema propugnant, suo quisque modo, Plato, Cartesius, Leibnitz, Rosmini.

Juxta *Platonem*, anima ante ejus unionem cum corpore ideas æternas et universales intuitive contemplabatur. Detrusa vero in corpus, omnis suæ prioris cognitionis memoriam perdidit; illam tamen iterum gradatim revocat, quando, scilicet, est ei præsens congruum incitamentum, vi cujus ad novam idearum cognitionem seu potius ad earum reminiscentiam determinatur. In Platonis igitur sententia *omnes* ideæ sunt innatæ.

Cartesius et sui tres classes idearum distinguunt: *(a) adventitias,* quas intellectus sibi efformat circa res sensibiles, ut ideam solis; *(b) factitias,* quas intellectus concipit ratiocinando de aliqua re *(v.g.,* de anima); *(c) innatas,* quas intellectus neque ex rebus externis accipit, neque ipse ratiocinando attingit, sed sibi inditas habet a prima suæ creationis instantia. Hujusmodi sunt ideæ infiniti et principiorum ordinis speculativi et practici. Fundamentum

hujus sententiæ in eo est, quod Cartesiani essentiam intellectus in cogitatione actuali reponant; cogitatio autem absque ideis esse non potest; aliquas igitur ideas menti necessario innatas esse existimant.

Leibnit: docet animam essentialiter continere quoddam schema vel confusam repræsentationem totius universitatis rerum; sensilis autem perceptio præbet occasionem, ut intellectus paulatim perveniat ad distinctas harum rerum cognitiones.

Rosmini unicam ideam innatam statuit, ideam nempe *entis idealis, indeterminati, possibilis,* quæ est quasi forma intellectus et omnis humanæ cognitionis, quum in omni conceptu includatur. Hac idea intellectus aptus redditur ad omnes alias acquirendas, easque acquirit ejusdem applicatione ad diversas sensationes. Idea entis exhibet nobis aliquid necessarium et universale, et proinde æternum et infinitum; quæ notæ, utpote quæ experientia oriri nequeant, menti naturaliter insitæ esse dicendæ sunt. Posita vero alicujus rei sensilis perceptione, intellectus tali perceptioni applicat ideam entis indeterminati, sicque hanc ideam determinat, ac intellectualem de re sensili conceptum efformat.[1] Ideam entis Rosmini provecta ætate ita exposuit, ut in ontologismum et pantheismum prolapsus sit (cf. opus: *Rosminianarum Propositionum Tutima Theologica,* Sectio 1ª et 2ª).[2]

[1] Quant à *l'origine* de l'idée d'être, Rosmini est d'avis qu'elle doit être innée, car elle est la condition *sine qua non* de toute activité intellectuelle. «Sans l'idée d'être», dit-il, «l'esprit humain ne pourrait faire aucune opération rationnelle, de telle sorte que, complètement privé de la faculté de penser et de comprendre, il cesserait d'être intelligent. . . Lorsque l'homme possède l'idée *d'être*, c'est-à-dire lorsqu'il sait ce que c'est que l'être ou l'existence, nous voyons tout de suite comment il peut transformer la sensation en idée. Lorsque nous éprouvons des sensations, nous pouvons, en effet, nous dire: C'est un être limité et déterminé par la sensation. Par exemple, quand je vois une étoile, je puis me dire mentalement: c'est un être lumineux et autres choses semblables» — (**Mercier**, *loc. cit.*, p. 53).

[2] Rosmini, who began his philosophical career as a defender of the theory of «inborn ideas», later entered the camp of the ontologists, and finally ascribed to the *idea entis* certain qualities which belong only to the Absolute, *i.e.*, God. By hopelessly confusing

291. Prob. Thesis. Arg.—Systema idoneum ad originem idearum explicandam debet fundari in aliquo experientiæ facto vel in aliquo rationis momento, secus nec *a posteriori* nec *a priori* quidquam pro eo adduci potest. *Atqui* systema idearum innatarum in nullo experientiæ facto, in nullo rationis momento fundatur; *ergo.*

1°. *In nullo experientiæ facto fundatur.* Nemo sibi conscius est se jam ab initio suæ existentiæ ideas (ne unam quidem) habuisse; e contra, universalis experientia testatur humanum intellectum ita esse constitutum, ut nonnisi sensibilibus innitendo actum cognitionis intellectivæ elicere possit. Et quidem, sua cuique conscientia clare refert cognitionem sensitivam esse suæ cognitionis intellectivæ initium, nimirum, se prius sensibilia cognoscere quam intelligibilia, singularia quam universalia, concreta quam abstracta, nec posse se immaterialia concipere, quin phantasmata in animam irruant. Idem testatur memoria quoad anteactæ vitæ cognitiones; quantum enim quisque potest suam pueritiam recolere, recognoscit se ideas activitate suæ mentis ex objectis hausisse. Nec juvat provocare ad ideas *entis, veri,* etc., quas semper in se reperit mens, quin earum originem recordetur. Hæc enim ideæ, utpote maxime elementares ac obviæ, mens jam a prima sui evolutione possidet; hinc, nil mirum si earum acquisitionem non recordamur, præsertim quum facillime ope abstractionis acquirantur, ut mox patebit. Ex parte igitur experientiæ nullum potest hoc systema mutuari subsidium.

2°. *Nullo rationis momento fundatur. (a)* Inepte et contra rationem recurritur ad causam extrinsecam, ut explicetur origo idearum, si ipsi intellectui competit virtus ad omnes, quas habemus, ideas efformandas; « frustra enim fit per plura, quod per pauciora fieri potest». *Atqui* certo ostendi nequit nullam aliam viam suppetere ad omnes gignendas ideas, immo virtutem omnes ideas ope

the notion of indefinite, general, abstract being (τό ὄν) with that of the infinite, concrete divine Being (ὁ ὤν), he gave the ontological system a decidedly pantheistic turn — (**Pohle,** *Knowability of God,* p. 119).

abstractionis acquirendi intellectui nostro naturaliter competere ex dicendis infra luculenter apparebit; *ergo*.[1]

(b) Ideæ innatæ, si intellectui insunt, aut præter indolem naturæ rationalis induntur, aut juxta ejusdem indolem et debitam perfectionem. *Atqui* ideæ præter indolem naturæ rationalis inditæ omnino gratis, ne dicam perperam, finguntur; quod enim ubique et necessario viget in natura rationali, præternaturale dici nequit. Si vero ideæ juxta naturæ indolem sunt innatæ, intellectum in suis operationibus a sensibus omnino independentem constituunt. Ideæ enim sunt ex natura sua repræsentativæ; si igitur originem suam haberent independenter a sensu, pariter vim repræsentativam independenter a sensu haberent; et intellectus his ideis instructus nullo sensus vel phantasmatis concursu indigeret — id quod certo falsum est (n. 278, *Arg.* II.).

Neve dicas: intellectus ob unionem animæ et corporis impeditur, quominus ideis innatis uti possit, nisi per cognitionem sensitivam ad earum usum excitetur. *Enimvero,* nulla facultas in naturali sua operatione impediri potest propter statum sibi connaturalem; unio autem animæ et corporis est naturalis et ad bonum et perfectionem utriusque ordinatur, et proinde nequit esse impedimento, quominus intellectus ideas innatas, si darentur, adhibeat.

[1] It is an established opinion amongst some men, that there are in the understanding certain innate principles, some primary notions, characters, as it were, stamped upon the mind of man, which the soul receives in its very first being, and brings into the world with it. It would be sufficient to convince unprejudiced readers of the falseness of this supposition, if I should only show how men barely by the use of their natural faculties, may attain to all the knowledge they have without the help of any innate impressions; and may arrive at certainty, without any such original notions or principles. For any one will easily grant that it would be impertinent to suppose the ideas of colour innate in a creature to whom God hath given sight and a power to receive them by the eyes from external objects; and no less unreasonable would it be to attribute several truths to the impressions of nature, and innate characters, when we may observe in ourselves faculties fit to attain an easy and certain knowledge of them — (**Locke.** *Essay on the Human Understanding,* Book I, c. 2).

292. *Thesis confirmatur* ex falsis fundamentis et inanitate rationum, quibus diversæ innatismi species fulciuntur: —

1°. Innatismus Platonis totus debetur gravissimo ejus errori circa naturam animæ; existimavit enim Plato animam humanam esse spiritum purum, qui ante vitam præsentem vitam perfectiorem degit, cujus conjunctionem cum corpore esse contra ejus naturam, et proinde non in bonum animæ, sed pœnalem et nocivam.

2°. Cartesiani censent necessitatem idearum innatarum in eo esse, quod essentia animæ in cogitatione consistat; quæ doctrina est manifesto falsa; cogitatio enim, quum sit operatio, essentiam animæ non constituit sed supponit, et ut effectus ab ea procedit. Præterea, in tali supposito non darentur nec dari possent in nobis *plures et diversi* actus cogitationis. Frustra *objicitur* cogitationem, quæ requiritur, non esse hanc vel illam particularem cogitationem, sed cogitationem simpliciter; *nam* cogitatio, quæ non est hæc vel illa, est aliquid abstractum, indefinitum, universale, quod ne existere quidem potest.

3°. Leibnitz dicendo animam vi suæ essentiæ præditam esse obscura universitatis rerum cognitione, incidit in falsam Cartesii opinionem jam notatam; nec satis distinguit inter intellectum humanum et divinum, cui soli competit vi suæ essentiæ universitatem rerum repræsentare.

4°. Systema Rosminianum eo innititur, quod idea entis indeterminati, utpote universalis et necessarii, et hinc æterni et infiniti, ope sensationis attingi nequeat, quum non talia attributa, sed prorsus opposita, sensationi competant. *Atqui* hæc eadem attributa insunt, non solum enti, sed omni essentiæ, prout ab actualitate præscindit *(Ont.*, n. 329). Unde, non solum idea entis indeterminati, sed etiam omnes ideæ universales innatæ deberent esse. Hoc speciale incommodum habet sententia Rosminiana, quod omnino inexplicatas relinquit ideas rerum immaterialium *(v.g.*, causæ, spiritus). Nam harum ideæ non possunt oriri *(a)* ex idea entis indeterminati, quum idea entis

indeterminati rem determinatam repræsentare nequeat; *(b)* ex sensatione, quum hæc non referat immaterialia, sed tantum materialia; *(c)* ex synthesi utriusque, quia in synthesi nihil invenitur præter synthesis elementa. Præterea, sensatio, quæ ponitur ut elementum determinans, ideam entis determinare nequit ad alia quam sensibilia repræsentanda.

Dices cum Rosminio: Idea entis ope abstractionis efformari nequit; hæc enim abstractio consisteret in mentali separatione notæ entis in genere a notis particularibus; quæ quidem separatio fieri nequit, nisi idea entis ut præhabita admittatur.

Resp. Neg. assertum. Ad. prob. *Conc. maj. Dist. min.* Separatio *voluntaria* fieri nequit nisi idea entis ut præhabita admittatur, *conc.; spontanea* fieri nequit, *neg.* Voluntaria abstractio præsupponit aliquam cognitionem universalem, ut inter unam et aliam notam ejusdem rei distinctio fiat. Abstractio autem spontanea, sine ullo voluntatis concursu, sponte naturæ, efficitur. Hinc, simul ac phantasia rem aliquam individualem intellectui objicit, hic talem rem sub ratione entis naturaliter apprehendit (cf. n. 310, 3°).

293. Schol. 1. – Reperiuntur innatistæ, qui systema suum confirmare conentur auctoritate quorumdam Ecclesiæ Patrum affirmantium ideam Dei esse nobis ingenitam, necnon S. Thomæ, eo quod passim dicit cognitionem primorum principiorum esse innatam seu naturalem. At vero, quod attinet ad SS. Patres, certum est eos non docuisse ideam Dei esse ingenitam in sensu innatistarum, sed tantum nos facile ac naturaliter posse ex rerum consideratione ad aliquam Dei notionem attingere absque philosophica investigatione, absque revelatione (cf. *Franzelin,* De Deo uno, p. 110).

S. Thomas quando passim scribit innatam esse cognitionem principiorum, vult significare inesse intellectui naturalem aptitudinem et inclinationem ad hæc principia cognoscenda. Aliud autem est idea innata, aliud innatus impulsus ad cognoscendum. «Cognitio *(inquit),* quæ fit

per aliquid naturaliter nobis inditum, est naturalis, sicut *principia indemonstrabilia, quæ cognoscuntur per lumen intellectus agentis*» (1, q. 107, a. 1). «Ex ipsa natura animæ intellectualis convenit homini, quod statim, cognito quid est totum et quid est pars, cognoscat quod omne totum est majus sua parte; et simile est in ceteris. Sed quid sit totum et quid sit pars *cognoscere non possumus nisi per species intelligibiles a phantasmatibus acceptas*» (1, 2, q. 51, a. 1). «Intellectus, quo anima intelligit, *non habet aliquas species naturaliter sibi inditas,* sed est in principio in potentia ad hujusmodi species omnes» (1, q. 84, a. 3). « Omnis nostra cognitio originaliter consistit in notitia primorum principiorum indemonstrabilium. *Horum autem cognitio in nobis a sensu oritur*» (*Q. Disp.* xi., q. 10, a. 6).

294. Schol. 2. — Intellectui humano, quum insit animæ cum materia conjunctæ, non convenit, ut ideis innatis informetur; non idem vero dicendum est de spiritibus puris, nimirum angelis, qui simul cum natura sua species intelligibiles rerum acceperunt, quibus utendo, modo unum, modo alterum conceptum elicere possunt. «Substantiæ spirituales inferiores *(scil.,* animæ) habent esse affine corpori, in quantum sunt corporis formæ; et ideo ex ipso modo essendi competit eis, ut a corporibus et per corpora suam perfectionem intelligibilem consequantur; alioquin frustra corporibus unirentur. Substantiæ vero superiores *(i.e.,* angeli) sunt a corporibus totaliter absolutæ immaterialiter, et in esse intelligibili subsistentes; et ideo suam perfectionem intelligibilem consequuntur per intelligibilem effluxum, quo a Deo species rerum cognitarum acceperunt simul cum intellectuali natura» (**S. Th.**, 1, q. 55, a. 2). Quæ ideæ innatæ repræsentant non solum universale sed etiam singulare, non solum abstractum sed etiam concretum, nimirum, repræsentant res præcise prout in natura existunt, cum omnibus suis proprietatibus essentialibus et accidentalibus.[1]

[1] As angels are, on the one hand, superior to us in nature, and on the other hand, have no external senses wherewith to place themselves in contact with the outer world, it follows not only that

§ 3. De Traditionalismo.

295. — Traditionalismus est ea de idearum origine theoria, juxta quam omnes, vel saltem aliquas, ideas ad naturalem perfectionem intellectus humani pertinentes assequi non possumus nisi per traditionem a primitiva revelatione divina emanantem.[1]

Auctores systematis fuerunt *De Bonald* et *Bautain*, quorum sententia est: *(a)* origo idearum idem est ac origo sermonis; cogitatio enim impossibilis est absque sermone; sermo autem, et proinde ideæ nobis societate transmittuntur. *(b)* Quum vero homo sermonem invenire non potuerit, absolute necessaria fuit primitiva revelatio, qua Deus protoparentibus donum loquelæ per revelationem verbis expressam daret, simulque depositum idearum seu veritatum intellectualium, quæ ad posteros ope sermonis et socialis educationis transmittendæ essent. Alii mitio-

they receive a much greater abundance of divine light than we do, but also that they receive it immediately from God, the supreme light of the world. And what is that light? It is not, it would seem, the mere power of understanding nor the capacity of knowing things. The light which angels receive from God consists in those images or mind-pictures (which are the representations of external objects), to which the angelic intellect can turn in order to know and understand the things of this world represented by them. The angelic intellect, then, is a living picture, or better still, a living mirror, which the angel need only contemplate in order to know the things of this world. . . . The intellectual operation of an angel consists in a placid gazing on the representations or images existing within its mind, and that from the first moment of its creation.

There is, however, a growth in the knowledge of angels. For as they do not know future events, it is necessary that their knowledge should increase when these events actually take place. . . . But this growth is not the result of new images forming in the angelic mind, the images infused from the beginning being sufficient for that purpose and representing these events as they take place in the course of time, thus enabling the angels to know new events with all their attendant circumstances.—(**Lépicier**. *The Unseen World*, p. 31).

[1] Traditionalism, whatever its different forms may be, is reducible to that which denies to the human mind the power of knowing the truth, at least as to its rational principles, otherwise than by the way of tradition ultimately founded on Divine revelation. Its most famous masters in modern times were De Bonald, Lamennais, and Father Ventura — (**Liberatore**, *On Univ.*, p. 176).

rem traditionalismi formam proposuerunt, intellectui humano concedendo vim acquirendi notiones et veritates ad ordinem physicum pertinentes, ast notiones (saltem claras) et veritates ordinis moralis et religiosi absque revelatione et sermone nullatenus posse acquiri dixerunt. Ita *Bonnetty* et *Ventura* (cf. *Gonzalez,* Hist. de Phil., v. iv.).

296.— Critica — 1°. *Sermo non potest esse causa vel conditio originis idearum in mente humana.* Etenim *(a)* sermo constat vocabulis; hæc autem, utpote idearum signa, supponunt ideas jam habitas. *(b)* Vocabula sunt signa arbitraria rei significatæ; *atqui* signa arbitraria in cognitionem rei significatæ ducere nequeunt, nisi prius cognoscatur nexus inter signum et rem significatam. *(c)* Vocabula prolata aut intelliguntur aut non: si non, ideas non ingenerant, ut patet; si intelliguntur, eorum significationem mens jam tenebat. Unde, fieri nequit, ut per sermonem nos primas ideas acquiramus.[1]

2°. *Falsum est nullam veritatem a nobis posse cognosci nisi per revelationem traditione transmissam. (a)* Nam acceptio revelationis divinæ necessario involvit plures veritates jam cognitas, nimirum, Deum existere, eum esse veracem, ei revelanti credendum esse, ejus revelationem ad nos usque transmissam esse. *(b)* Discrimen essentiale ponendum est inter veritates ordinis naturalis et veritates ordinis supernaturalis; *atqui* in præsenti sententia hoc discrimen deletur, quum ad illas, non secus quam ad istas, veritates assequendas, revelatio divina postuletur.[2]

[1] Philosophically, the fundamental fallacy of traditionalism lies in the false assumption that language engenders ideas, while in matter of fact it is quite plain that, on the contrary, language necessarily presupposes thought and ideas already formed. Man must first have ideas before he can express them in words. . . It is quite true that language and instruction play an important, nay, a necessary part in the formation of ideas, but only in so far as the spoken word of parent or teacher leads the child to think for himself and supports and aids him in such independent thinking. We may also concede that without the family and society no child can *fully* develop his mental faculties — (**Pohle**, *op. cit.*, p. 46).

[2] The Vatican Council teaches that man can know for certain

297. Traditionalistæ *objiciunt*: 1°. Pueri quidam, qui extra societatem humanam adoleverunt, omni idea supremi numinis et obligationis moralis caruisse reperti sunt; *ergo* ad has ideas acquirendas sermone opus est.

Resp. Numerus puerorum, qui ita adolevisse asseruntur, minor est quam qui sufficiat ad theoriam de nativis rationis humanæ viribus stabiliendam; non plus enim quam quadraginta enarrantur, et ex his plures sunt, quorum historia aut omnino falsa aut valde dubia jure reputatur. Sed quidquid sit, nihil in favorem traditionalismi exinde sequitur: nil enim mirum, si pueri hujusmodi ideis ad religionem et mores pertinentibus destituti viderentur, tum quia extra humanam societatem versatis, necesse fuit, ut eorum ratio tardius se evolveret; tum quia miseria, in qua detinebantur, eos in tantum animi mœrorem et torporem injecerit, ut parum propensi fuerint ad causas rerum perscrutandas. Si igitur revera caruissent notionibus prædictis, id non esset tribuendum ulli nativæ impotentiæ intellectus humani, sed causis extrinsecis et accidentalibus.

2°. Homo est natura sua socialis; *ergo* nonnisi in societate potest suas facultates explicare.

Resp. Nonnisi in societate potest homo facultates ***facile*** et ***perfecte*** explicare, *conc.;* absque societate eas ***nullo modo*** potest evolvere, *neg.* Ut homo ad expeditum usum rationis perveniat, magisterium alienum non est ***physice*** necessarium, sed *valde utile:* nimirum, ope hujus subsidii homo facilius tutiusque veritatis cognitionem assequitur, quam si propriis suis conatibus relinqueretur.

that God is the beginning and end of all things, if only he let the natural light of his reason shine on created things. . . . This natural knowledge, the acquisition of which is said to be within man's reach, supposes the reason to be well developed — to such an extent at least that man can actually use it. The Council does not define what conditions are necessary in order that the development may be considered adequate. Only the rankest *Traditionalism* is outlawed which assumes that the use of reason involved in arriving at the knowledge of God can be brought into play by nothing save a positive revelation from God, immediate or traditional. For supernatural revelation would thus be made absolutely necessary — (**Schanz.** ***A Christian Apology,*** p. 99).

On September 8th, 1840, Bautain was obliged to subscribe six propositions which teach that human reason can prove with certainty the existence of God; that faith comes later than revelation, and, therefore, cannot be used to prove the existence of God against unbelievers; that the use of reason precedes faith, and guides man to faith with the aid of revelation and grace. In 1855, the Congregation of the Index, with the approval of Pius IX., ordered Bonnetty to subscribe four propositions which declare that reason can prove with certainty the existence of God, the spirituality of the soul, and the free will of man *(id., ib.,* p. 113).

Immo ***moraliter*** necessaria est revelatio, et proinde traditio, «ut ea, quæ in rebus divinis *rationi per se impervia non sunt,* in præsenti quoque generis humani conditione ab omnibus *expedite, firma certitudine* et *nullo admixto errore* cognosci possint» (*Conc. Vat.*, Const. de fide, c. 2).

298. Schol. De Sermonis Origine. — Hoc loco quæri potest, *(a)* utrum homines suis viribus naturalibus relicti potuissent per seipsos sermonem primitivum formare *(quæstio juris);* et quatenus affirmative, *(b)* utrum homo primus revera aliquam linguam invenerit, an fuerit ipsi divinitus infusa *(quæstio facti).* Neutra quæstio quidquam cum traditionalismo commune habet, quia, ut constat ex dictis, ad ideas comparandas sermo minime requiritur. Solum theoriæ libere inter Catholicos agitatæ adducuntur, ceteræ videri possunt apud *Tilm. Pesch* (Psych., v. iii., p. 472; *Janet* et *Seailles*, Prob. of Phil., v. i., pp. 202 sqq.).

1°. *Quæstio juris.* Opinio omnino communior docet hominem ob insitam facultatem et propensionem ad ideas manifestandas potuisse sermonem sibi efformare. Nihil enim obstat, quominus homo, innata vi loquendi præditus et desiderio suas cognitiones cum aliis communicandi allectus, erumpat in aliquos sonos articulatos et ope signorum naturalium res per hos sonos significatas aliis indicet, ac sic paulatim quidam soni cum quibusdam objectis associati evadant, quo pacto germina linguæ præformentur.

2°. *Quæstio facti.* Quoad quæstionem facti, alii putant sermonem fuisse homini revelatum, alii vero opinantur hominem invenisse sermonem, Deo specialissimum auxilium præbente. «Pauci illi SS. Patres, qui de hac re loquuntur (inquit **Chr. Pesch**, *Prælect. Dogm.*, v. iii.), *simpliciter dicunt linguam inventam esse ab homine*». Deinde, aperto testimonio SS. Aug., Basilii, Greg. Nys., citato, sic pergit: «Contra vero apud posteriores theologos, satis communis erat opinio *Deum revelasse hominibus primam linguam*». . , sed «nullo probabili argumento ostendi potest Deum umquam hominibus linguam revelasse.

Potius probabile videtur Adamum natura duce primam linguam produxisse. Deus ei non sola dederat organa ad sonos articulatos proferendos apta, sed præterea infuderat ei scientiam, qua non objecta tantum extra posita cognosceret, sed etiam intelligeret se posse his vel illis sonis hæc objecta apte significare; et tandem occasionem ei præbebat hanc facultatem exercendi loquendo cum ipso, adducendo animalia, ut eis nomina imponeret, creando ei adjutorium simile sibi, ita stimulando naturalem inclinationem, quæ homini inest, conceptus suos repræsentandi et cum aliis communicandi ».

§ 4. De Ontologismo.

299. THESIS XXX. — Doctrina ontologistarum dicentium mentem humanam in hac vita immediata Dei cognitione frui, est prorsus excludenda.

Stat. Quæst. Ontologismus[1] est systema, quod immediatam Dei intuitionem statuit tamquam principium omnis cognitionis intellectualis. Unde, systema importat nos cognoscere Deum, non per speciem intelligibilem a rebus creatis haustam, et prout in his se manifestat, sed immediate et prout in se est, immo Ipsum esse lumen, in quo cognoscimus omnia.

Ontologistæ hæc statuunt: —

1°. Oportet objectum immediatum mentis nostræ sit ipse Deus; nam ex una parte hoc objectum debet esse immateriale, secus non posset cum mente conjungi; ex alia autem parte debet in ipso contineri ratio necessitatis, immutabilitatis, æternitatis, etc., quæ elucent in nostris cognitionibus intellectivis, quæque in nulla re creata reperiri possunt.

2°. Universalia igitur, quæ menti nostræ obversantur, a parte rei considerata, non sunt a Deo realiter distincta,

[1] Le nom *ontologisme* vient de ce que, selon les ontologistes, les idées ne sont pas des modifications de l'âme intelligente, mais des réalités objectives distinctes de l'âme (ὄντα) posées en face d'elle, contemplées par elle — (**Mercier**, *Psych.*, v. ii., n. 176 p. 49).

sed sunt ipsa divina realitas, prout est rerum finitarum exemplar.

3°. Quoniam incongruum est, ut divina realitas, quæ est lux intelligibilis, per aliam lucem nostro intellectui repræsentetur, dicendum est Deum non solum esse objectum intellectus, sed esse ipsius lumen et quidem non tantum in genere causæ *efficientis,* quatenus Ipse præbet nobis virtutem cognoscitivam, sed etiam in genere causæ *formalis,* quatenus Ipse est lumen, quo intellectus humanus constituitur aptus ad Ipsum intuendum et in Ipso omnia universalia.[1]

4°. Hæc immediata Dei cognitio est imperfecta et confusa, quia anima, phantasmatum incursu distracta, impeditur, quominus aciem suam in luce divina firmiter defigat. Quæ cognitio confusa constituit essentiale discrimen inter visionem beatificam et nostram.

Diversi fautores ontologismi nonnisi in modo loquendi inter se differunt. Sic *Malebranche* dicit intellectum terminari ad rerum exemplaria, quæ in mente divina relucent. *Gioberti* (et quodam modo *Brownson,* « Works, » v. i., p. 257) affirmat nos intueri divinam actionem creatricem, cujus termini sunt existentiæ. Unde celebris ejus formula: *Ens* (Deus) *creat existentias* (creaturas); in qua

[1] The ontologists (Malebranche, Gioberti, Ubaghs, etc.) taught that the first act of the intellect is an intuition of God, and the first object of that act is God and His divine ideas. This theory owes its origin and its success to an erroneous interpretation of the two following facts: — *(a)* The essences of material things owing to our abstract manner of apprehending them, may be referred to an indefinite number of individuals, and on this account may become *universals;* and universal essences form the basis of propositions that, in a sense that is legitimate but needing explanation, are *necessary* and *eternal. (b)* Our knowledge penetrates beyond finite things at least some little distance into the regions of the Infinite. The only way the ontologists could account for these two facts *(a)* the marks of universality, necessity and eternity of the essences of things and of their relations, and *(b)* the presence in us of the idea of the Infinite) was in the supposition that God Himself, the Necessary, the Eternal and the Infinite, is the immediate term and proper object of the human understanding — (**Mercier**, *Manual,* v.i., p. 253).

formula reponit fundamentum omnis cognitionis.[1] Rosmini distinguens inter esse reale et esse ideale docet mentem humanam in hac vita non intueri divinam essentiam seu *esse reale* Dei, sed *esse ideale,* quod Deus abstrahit a suo esse reali. Esse autem ideale juxta Rosmini est ipsum Verbum divinum.[2]

Modernistæ ponunt « quemdam cordis intuitum, quo homo ipsam, sine medio, Dei *realitatem* attingit» per «experientiam rationali qualibet experientia præstantiorem» — (Pius X. Encycl., *Pascendi,* 1907).

300. Prob. Thesis. Arg. — Ontologismus sub quacumque forma proponatur, essentialiter in hoc consistit, quod intellectus humanus in hac vita Deum immediate intuetur; *atqui* hæc doctrina multiplici ratione falsa ostenditur; *ergo.*

Prob. min. — 1°. Hæc intuitio, utpote actus internus

[1] Since Malebranche, no one has defended ontologism more vigorously than Gioberti. He represents the immediate intuition of God, which he believes to be natural to man's mind, as a direct perception of God's influence upon this world. Consequently the starting-point of all human learning is this judgments: « Being creates existences » (*L'Ente crea le esistenze*). By *Being* he understands the self-existing Divinity: by *existences,* creatures, which he does not call beings, because they have no independent being of their own. . . . His opinion consequently is that our first intellectual act is a direct intuition of God creating the world — (Boedder, *Nat. Theol.,* p. 13).

[2] Justly does Cornoldi say: — « The chief discrepancy between Malebranche and Rosmini, with regard to intuition, lies in this, that the former being sincere instead of being sophistical, tells you distinctly and clearly what he means, while the latter involves himself in a labyrinth of ambiguous words, lest his adversaries should be able to send a shot into a vulnerable part of his system. Malebranche admits that the object of the human intellect is not the Divine essence, but indeterminate being, the archetypal ideas, the Divine *rationes* of all things; and not attempting to deny that what is in God is God, he openly says, with praiseworthy frankness and honesty, that man here below does with his intellect see immediately in God all truth, all things — nay, that he intues God. Rosmini sets himself to deny that man here below can with his intellect see God; and, discoursing about ideal being, indeterminate being, being that belongs to the Divine nature, but nevertheless cannot be called God, takes in the less wary, who are thereby easily persuaded that the teaching of the one is opposed to the teaching of the other» — (Liberatore, *On Universals,* p. 182).

cognoscitivus, si adesset, non posset a conscientia non renuntiari, quum ei intime et jugiter esset præsens; *atqui* tantum abest, ut renuntietur, ut, diligentissima reflexione adhibita, ejus præsentiæ nullo modo conscii esse possimus. *Neve objicias* hunc conscientiæ defectum inadvertentiæ vel assuetudini deberi; *nam* ea, quorum ob has causas nullam habemus conscientiam, leviora sunt, nihilominus autem etiam talia attentione nobis clare innotescunt.[1]

2°. In hypothesi ontologistarum nullum discrimen essentiale daretur inter visionem beatificam et visionem hujus vitæ, sed discrimen solummodo accidentale consistens in gradibus intensitatis; utraque enim Deum immediate et intuitive attingeret, nec major vel minor intensitas mutaret visionis essentiam. *Atqui* hoc perinde est ac ordinem supernaturalem evertere vel eum cum ordine naturali confundere. «Quidam dixerunt (inquit **S. Th.**), quod Deum per essentiam videre, non solum contingit in patria, sed in via, quamvis non ita perfecte in via sicut in patria. Sed istud dictum contrarium est Scripturæ testimoniis, quæ concorditer in divina visione beatitudinem ultimam hominis ponit. . . In hoc igitur unaquæque rationalis creatura beata est, quod essentiam Dei videt, non ex eo quod ita limpide, vel plus vel minus eam videt. Non igitur visio beati a visione viatoris distinguitur per hoc quod est perfectius et minus perfecte videre, sed per hoc quod est *videre et non videre*» (*Q. Disp.* xi., q. 18, a. 1).

Nec licet objicere cognitionem divinæ essentiæ in seipsa esse beatitudinem, non autem cognitionem ejusdem ut est exemplar rerum: — *quia* quum Deus sit ens simplicissimum, is, qui eum immediate videt, essentiam ejus

[1] If the direct intuition of God in His relation to creatures is a natural endowment of the human soul, we certainly must be able to become with the greatest facility perfectly convinced by *mere reflexion* of the fact that we are in God's presence, and no thought should be easier to us than the thought of God. However, this is not so. *Effort* is required to raise our mind from things visible to their invisible First Cause. Even those who are perfectly convinced of God's existence, may live hours and days without thinking of Him — (**Boedder**, *op. cit.*, p. 15).

videat necesse est; nec potest essentia videri ut exemplar, nisi prius videatur in se.[1]

3°. Juxta ontologistas, objectum idearum universalium, quum hæ sint necessariæ et immutabiles, debet esse ens necessarium et immutabile, *scil.*, Deus; *atqui* objectum idearum prædicamus per identitatem de rebus finitis, *v. g.*, id, quod præ mente habemus, dum de *ente, substantia, vita,* etc., ideas formamus, est realiter identicum cum rebus, quas hæ ideæ repræsentant, et ut identicum de eis prædicatur. Jamvero, si objectum harum idearum sit divina essentia in sua relatione ad creaturas, nonne sequitur id, quod de creaturis prædicatur, esse divinam essentiam?

4°. Juxta ontologistas, Deus est ipsum lumen intellectus humani; *atqui* intellectus lumen, vere et proprie ad naturam creaturæ pertinet; ex quo ontologistæ, si sibi consentire velint, concludere debent Deum esse aliquid vere et proprie pertinens ad naturam creaturæ intellectualis, unam eamdem esse rationem intellectivam Dei et hominis, unum esse omnium lumen intellectuale, unum intellectum, unam vitam (cf. *Lepidi,* De Ontologismo, cc. 21, 22).[2]

[1] « Non est possibile quod aliquis videat rationes creaturarum in ipsa divina essentia, ita quod eam non videat: tum quia ipsa divina essentia est ratio omnium eorum, quæ fiunt; ratio autem idealis non addit supra divinam essentiam nisi respectum ad creaturam: tum quia prius est cognoscere aliquid in se, quod est cognoscere Deum, ut est objectum beatitudinis, quam cognoscere illud per comparationem ad aliud, quod est cognoscere Deum secundum rationes rerum in ipso existentes » — **(S. Th.**, 2, 2. q. 173, a. 1).

[2] Ontologists agree with traditionalists that the soul has no power of generating ideas, or of knowing things by means of ideas created with it: but that it sees all things in God. The idea of God lights up our reason, and all things else besides. The ideas of the true and eternal are given along with it, in it we see all things. The soul *immediately* grasps God, who is ever present within her as the one perfect being. . . . Both schools are unable to give a satisfactory account of our knowledge: both are powerless to gain a victory over false idealism. If the two systems were pushed to their ultimate conclusions, the landing-stage on which the passengers of both would disembark would be ideal pantheism. It is needless to add that their advocates did not draw this conclusion. To place the logical order of knowledge on a par with the ontolo-

5°. Sententia ontologistarum adversatur naturæ humanæ, cui, utpote materia et spiritu compositæ, nequit competere modus intelligendi, pure spiritualis, sicut angelis competit, sed talis modus, qui necessario includit cognitionem sensitivam. Operatio enim cujuslibet rei sequi debet ipsius naturam, eique proportionari, quum natura sit primum principium intrinsecum operandi in omni agente sive physico sive cognoscitivo. Præterea, data immediata Dei intuitione, non apparet *(a)* quomodo errare possimus circa rerum cognitionem; *(b)* unde veniat species veritatis, quam error præ se fert; *(c)* cur denique ad res intelligendas tanto studio tantoque rationis discursu plerumque indigeamus.

301. *Thesis confirmatur* suprema Ecclesiæ auctoritate. Nam Clemens V. in Concilio Viennensi hanc propositionem damnavit: «anima non indiget lumine gloriæ ipsam elevante ad videndum Deum».

Conc. Vat. in suo *de Revelatione* canone docuit « Deum . . . *per ea, quæ facta sunt,* naturali rationis humanæ lumine certo cognosci posse ».

In eodem Concilio *Card. Sforza,* et *Card. Pecci* (postea *Leo* XIII.) sequentem propositionem, quam multis argumentis impugnarunt (cf. *Trutina Theologica Prop. Rosm.*, p. 457), proposuerunt damnandam: «*Naturalis est homini cognitio Dei immediata et directa*». Quam tamen propositionem, sicut plures alias, ob defectum temporis, Conc. examinare non potuit.

gical order of being, and to make God, who is first in the order of being, also first in the order of thought, is sound reasoning only in a pantheist. From his point of view the immediate intuition of God is conceivable because, according to him, the soul, in becoming self-conscious, sees God in itself. But just as pantheism is unable to cope with experience, life, and matter, so ontologism contradicts the facts of experience and empirical consciousness. . . Ontologists and their followers who, in the intuition of God, perceive at the same time something outside God, must needs perforce invest something outside God with divine attributes. God is truly the light that enlighteneth every man that cometh into the world: but He enlighteneth man by hanging up in his soul the lamp of reason which enables him to see Creator and creature — (**Schanz**, *op. cit.*, v. i., p. 102)..

Anno 1861. S. Congregatio Inquis. indicavit septem propositiones ad ontologismum spectantes, quæ *tuto tradi non possint.*

Denique, 1887, Leo XIII. per decretum «Post obitum», quadraginta propositiones (quarum septem ad ontologismum spectant) ex operibus Antonii Rosminii excerptas «reprobavit, damnavit, proscripsit».

Schol. Quam immerito in sui systematis favorem invocent ontologistæ auctoritatem quorumdam Patrum et Doctorum Ecclesiæ *(v.g.,* SS. Augustini, Anselmi, Bonaventuræ), quisque videre potest consulendo *Lepidi* (op. cit., cc. 16-19), *Franzelin* (De Deo uno, *th.,* xi), *Urráburu* (Psych., v. ii., p. 1070), *Pesch* (Psych., v. iii., p. 102).[1]

302. Obj. 1. Ut intellectus objectum aliquod immediate apprehendat, duo sufficiunt, nimirum, ut objectum sit intelligibile, et ut sit intellectui immediate præsens: *atqui* Deus est summe intelligibilis, estque intellectui nostro intime præsens ratione ejus omnipræsentiæ; *ergo.*

Resp. *Dist. maj.* . . sufficit, ut objectum sit *in se* intelligibile, et ut sit intellectui *utcumque* præsens, *neg.*; ut sit intelligibile *quoad intellectum nostrum,* et ei sit præsens præcise *ut* objectum cognoscibile, *conc. Contradist. min.* Deus est summe intelligibilis in se, et est præsens intellectui tamquam causa illum conservans et cum illo in intelligendo cooperans, *conc.* Deus est immediate intelligibilis respectu intellectus nostri eique est præsens sub ratione objecti cognoscibilis, *neg.* Requisita ad immediatam cognitionem sunt *(a)* proportio objecti ad facultatem cognoscitivam et *(b)* talis præsentia objecti, ut hoc determinet facultatem ad actum cognitionis eliciendum. Jamvero, «qui attente ponderaverit, hinc purissimam actualitatem divinæ naturæ cum ejus infinitate et immensitate conjunctam, inde vero limitatas vires naturales cujusque intellectus creati, et imperfectum modum illius, statim (credo) intelliget esse per sese valde verisimile non posse tam imperfectam facultatem suis viribus formare proprium conceptum tam excellentis objecti. Quod etiam aptissime declarat sensibile exemplum, quo usus est Aristoteles cum dixit, sicut se habet oculus noctuæ ad lumen solis, ita comparari intellectum nostrum ad manifestissima naturæ. Addereque nos possumus infinita inæqualitate seu disproportione di-

[1] Not a single one of the Fathers ever taught that man enjoys an intuitive vision of God here on earth, no, not even St. Augustine, on whom the ontologists chiefly rely — (**Pohle**, *Knowability of God,* p. 127).

stare magis quemlibet intellectum creatum ab increato lumine divino, quam oculum noctuæ a lumine solis: si ergo non solum oculus noctuæ, verum etiam multi alii perfectiores non possunt solem in se directe intueri, quid mirum est, quod sit Deus invisibilis omni intellectui creato, propria et naturali virtute operanti? — **(Suarez,** *Meta., Disp.* 30, s. xi., n. 14).

Obj. 2. Ordo logicus, quum sit quædam viva expressio ordinis ontologici, debet eidem respondere seu esse conformis: *atqui* hæc conformitas non haberetur, nisi Deus, primum ens, prius cognosceretur, et per ipsum res creatæ; *ergo.*

Resp. *Dist. maj.* Ordo logicus debet respondere ordini ontologico, illum exprimendo, prout est, *conc.;* . . . debet respondere ordini ontologico, ita ut *(a)* modus cognoscendi sit sicut modus rei cognitæ, et *(b)* quæ in seipsis sunt priora, debeant esse prius cognita, *neg.* Triplex harmonia ordinis logici cum ordine ontologico excogitari potest: *(a)* quod res eo modo sint in intellectu, quo in seipsis existunt; quæ harmonia non datur (cf. *Crit.,* n. 224); *(b)* quod ordo cognitionum sequatur ordinem rerum; quod quidem non est verum universim, quum detur demonstratio *a posteriori; (c)* quod res concipiantur secundum id, quod sunt, et de illis affirmetur ille modus essendi, qui reapse illis competat. Hæc tertia harmonia est illa, quæ existit inter ordinem logicum et ordinem ontologicum.

Obj. 3. Id quod mens primo concipit, est ratio entis ut sic; *atqui* hæc ratio nequit esse nisi ens infinitum; *ergo.*

Resp. *Trans. maj. Dist. min.* Hæc ratio nequit esse nisi ens infinitum in extensione, *trans.;* in comprehensione, *neg.* Objectio confundit ens maxime indeterminatum et imperfectum cum ente maxime determinato et perfecto (cf. *Ont.,* n. 267, 5°).[1]

§ 5. Systema Scholasticum circa Idearum Originem.

303. Systemata supra recensita peccant alia defectu,

[1] The worst feature of the ontologist system is its immanent pantheistic bias. We do not, of course, mean to charge all ontologists, most of whom were well-meaning, learned, and honourable men, with consciously advocating pantheism, though several of them, like Gioberti and Rosmini, seem to have quite frankly drawn the last conclusion from their premises. What we mean to say is, that the system as such, in its logical deductions, inevitably runs into the marshes of pantheism. This is most plainly apparent in those forms of ontologism which identify abstract being *(esse universale)* with Divine Being *(esse infinitum),* and confuse knowledge of the one with an intuition of the other. For if abstract being is identical with Divine Being, then everything that can be subsumed under the universal notion of being is God; in other words: *Everything is God* — **(Pohle,** *op. cit.,* p. 123).

excessu alia. Et quidem defectu peccant sensismus, qui facultatem sensu essentialiter perfectiorem non agnoscit; et traditionalismus, qui talem facultatem agnoscens, adeo debilem eam reputat, ut ei inesse neget vim assequendi, absque traditione, cognitiones ad ordinem intellectualem et moralem pertinentes. Excessu peccant innatismus et ontologismus, intellectui nostro, ad instar intellectus angelici ideas innatas, vel ad instar intellectus beatorum immediatam Dei intuitionem,[1] tribuentes. Systema scholasticum, intellectum humanum nec plus æquo deprimens nec plus æquo extollens, via media incedit, nihil necessarium excludens, nihil superfluum admittens. Totum namque systema verbis sequentis thesis enunciatur.

304. THESIS XXXI. — Intellectus humanus sibi efformat suas ideas primitivas, quatenus in rebus ope sensuum externorum perceptis et in phantasia depictis apprehendit quod est essentiale, commune, immateriale, relictis omnibus notis individuantibus et materialibus, quæ illud in concreto comitantur.

Stat. Quæst. — Ut apte explicetur origo idearum, oportet considerare quid sit objectum proprium intellectus, seu, id quod intellectus primo et per se cognoscat; et quid a parte cognoscentis requiratur, ut intellectus hoc suum objectum attingat. Prima quæstio soluta manet supra, ubi probatur proportionatum objectum intellectus esse quidditatem rerum materialium. Altera quæstio involvit nonnulla puncta, quæ hic breviter exponenda sunt.

305. **Intellectus agens.** Ex natura cognitionis liquet omnem cognitionem eo fieri, quod facultas cognoscens assimilatur et conformatur objecto cognito. Jamvero, quum intellectus humanus initio sit tantum in potentia ad cognoscendum, et ad omnem actum cognitionis sit prorsus indifferens, necesse est, ut e statu potentiæ et indifferentiæ transeat, et huic potius quam illi objecto constituatur actu conformis. Quod ut fiat, a suo proprio objecto affici et determinari debet; nulla enim alia assignari

[1] In visione beatifica essentia divina, intelligibiliter intellectui unita, eum sine medio determinat ad visionem; quod etiam contingere dicitur, quando anima separata vel angelus cognoscit seipsum.

potest causa, cur intellectus determinato objecto se conformet nisi influxus istius objecti. Proprium vero objectum intellectus in hac vita est quidditas rerum materialium; ergo intellectus, ut actum cognitionis eliciat, affici et determinari debet a quidditate rerum materialium.

306. Quoniam autem prædicta quidditas non existit a parte rei exuta suis qualitatibus et conditionibus individuis et materialibus, et quoniam nullum ens corporeum potest propria virtute agere in facultatem incorpoream, requiritur facultas abstractiva, cujus opera quidditas evadat immaterialis et universalis et proinde intelligibilis. Quæ facultas dicitur *intellectus agens,* quia activitate sua objectum reddit intelligibile. Sensus autem suis cognitionibus ad operationem intellectus concurrunt; speciatim vero et proxime concurrit phantasia, in qua cognitiones omnium sensuum conjunctæ exhibentur. Ad præsentiam phantasmatis intellectus agens, vi suæ naturæ ad agendum determinatus, abstrahit *speciem,* i.e., essentiam rei sine notis individuantibus exhibet menti cognoscendam. Hæc repræsentatio dicitur *species intelligibilis impressa,* et definitur: *intentionalis similitudo exhibens rei essentiam et mentem determinans ad actum cognitionis eliciendum.*

Dicitur *similitudo intentionalis,* non quod realis non sit, sed quia deservit cognitioni, quæ *intentio* dicitur (cf. *Log.*, nn. 17 et 144).

Intellectus agens definitur: *illa animæ facultas, quæ efficit species intelligibiles, eas a phantasmatibus abstrahendo.* Abstractio universim significat unius ab aliis separationem. Abstractio autem, quæ cognitione perficitur, significat attentionem ad unum eorum, quæ in re conjuncta sunt, aliis non attentis. Triplex autem est hujusmodi abstractio: *(a)* alia, qua una proprietas ab alia, quæ in eadem re existit, separatur, ut albedo a dulcedine; *(b)* alia, qua forma a subjecto distinguitur, ut albedo ab albo, humanitas ab homine; *(c)* alia, qua essentia discriminatur a conditionibus individuis et materialibus, ut homo a Petro, equus a Bucephalo. Hæc postrema abstractio primario convenit intellectui agenti. « Abstrahit intellectus

agens species intelligibiles a phantasmatibus, in quantum per virtutem intellectus agentis accipere possumus in nostra consideratione naturas specierum sine individualibus conditionibus, secundum quarum similitudines intellectus possibilis informatur» (**S. Th.**, 1, q. 85, a. 1, ad 4).[1]

Unde, *adstrahere species* nihil aliud est quam efficere in potentia cognoscitiva speciem, *sine* conditionibus materialibus, quam repræsentat etiam phantasma, sed *cum* hisce conditionibus.

307. Intellectus agens dicitur *intellectus*, non quod ipse actum intellectionis eliciat, sed quia per ipsum objectum fit proportionatum et præsens ad vim cognoscitivam animæ. Dicitur *agens*, quia ob præsentiam phantasmatis, quin actionem ejus patiatur, fit actu producens speciem intelligibilem.[2]

[1] The two factors of knowledge are the cognoscitive power and the object. The object, when external, must be united to the cognoscitive power by means of a likeness of itself *(species)*, which it produces therein. But though the sensible objects, to which the human soul is directed for the acquisition of knowledge, are sufficient to produce this likeness in the external senses, and by their means in the *imaginativa*, where the sensitive knowledge is accomplished, they are not sufficient with respect to intelligence, which being a spiritual faculty, can only receive into itself a *species* equally spiritual and therefore free from material conditions: and a corporeal concrete thing cannot rise to that. Nevertheless the same corporeal real thing has a tendency to manifest itself to the intelligence in virtue of its *form*, which is a faithful copy of the divine idea, in imitation of which it was brought into the real order. But this tendency, not being itself sufficient, needs the help of a virtue innate in the intelligence, which virtue supplies the deficiency by making the object that operates together with it influence the intelligence, as to its *form*, and not by reason of the material conditions that confine it within its sensible concreteness. This virtue is the *intellectus agens;* and its influence on the *phantasmata* is called abstraction, because its effect is to produce in the *intellectus possibilis* the *representative species* of the object's quiddity alone, and not of its individualizing conditions — (**Liberatore.** *On Universals*, p. 78).

[2] The *intellectus agens* must be conceived as instinctive or blind: its «abstractive» action is *productive* of intelligence, not formally intelligent itself. . . . It may be here asked if the action of the *intellectus agens* be instinctive, why does it issue into the precisely appropriate activity? Why does it effect exactly the right modification to represent the object of the sensuous impression when the

Intellectus agens dici solet *lumen intellectuale,* quia per ejus operationem evadunt *actu* intelligibiles essentiales notæ, quæ prius, utpote cum notis accidentalibus identificatæ, *potentia* tantum erant intelligibiles. Unde actio, qua intellectus agens phantasma illuminat, non differt realiter ab abstractione et speciei productione.[1]

308. Intellectus possibilis. — Species impressa est quidem objecti *similitudo,* ast similitudo *virtualis* et *effectiva,* haud vero *formalis. Virtualis* dicitur similitudo, quæ efficere potest similitudinem formalem; *formalis* autem, quæ exhibet ipsam formam rei, cui similis esse dicitur. Hinc, species impressa, si esset formalis similitudo objecti, intellectum redderet formaliter cognoscentem; revera autem, ut ejus nomen innuit, se non habet ad modum *termini* cognitionis, sed potius ad modum *principii,* quatenus ejus receptione facultas plene expedita constituitur ad eliciendum actum cognitionis. Hæc facultas dicitur *intellectus possibilis,* et est facultas, quæ *formaliter* intelligit, seu *facultas, quæ formalem similitudinem objecti immaterialis in se exprimit.*

309. Unde, 1°. Primum munus intellectus possibilis est

latter cannot directly act upon it? The answer lies in the fact that both sense and intellect have their source in the same indivisible soul, which is so constituted that on the stimulation of the former the latter sympathetically responds by a higher reaction of its own — somewhat as the appetitive faculty, which conceived as such is blind, tends towards an object apprehended by a cognitive faculty as good — (**Maher**, *Psych.*, p. 308).

[1] The action of the *intellectus agens* consists in causing to appear before the intellective faculty (called by S. Thomas *intellectus possibilis)* the quiddity alone in the objects offered by sense, without the individualizing conditions that determine them in existence; and therefore it is that the *intellectus agens* which exercises the said action, is called under different aspects light and abstractive virtue. It is called light, because it makes the object appear to the intellective faculty, as material light makes colours appear to the eye. It is called an abstractive virtue, because, by its influence, it sequesters the said object from the material conditions that bound the same in the sensible representation. The quiddity, shining before the intellective faculty in the way just pointed out, produces in it the *species intelligibilis*, informed by which it produces the mental word — (**Liberatore**, *op. cit.*, p. 168).

recipere speciem intellectu agente abstractam; et sub hoc respectu est facultas *passiva*, quia eget determinari a specie intelligibili, et *possibilis*, quia est in potentia ad hoc vel illud objectum cognoscendum,[1] « potens omnia fieri ».

2°. Specie impressa affectus et informatus, intellectus possibilis exprimit in se formalem objecti similitudinem, quæ est medium, quo objectum cognoscit. Quæ similitudo dici solet *species expressa, verbum mentis, idea, conceptus*, etc. Hæc species non realiter distinguitur ab actione intellectus eam producentis. (cf. v. i., n. 16, 2°); nec est *id quod* intelligitur, sed *id quo* intellectus intelligit (v.i., n. 205).

3°. In ideas sic habitas potest intellectus reflectere, easque intimius penetrando, potest, ope analysis, synthesis, judicii, ratiocinii, analogiæ, novos conceptus efformare; quo pacto uber seges scientiarum ex quibusdam primitivis notionibus efflorescit. Unde, unica operatio intellectus agentis est specierum abstractio, reliquæ operationes intellectui possibili tribuendæ sunt.

1°. Operatio intellectus possibilis, secus ac operatio intellectus agentis, est immanens. « Duæ (inquit **Suarez**) colliguntur differentiæ inter has potentias. Prima, quod altera est cognoscitiva, altera minime. Secunda, quod actio intellectus possibilis vitalis sit atque immanens, quum sit actio cognoscendi; at intellectus agentis operatio ex se et ex propriis non item; productio quippe speciei *ex suo genere* posset a re non vivente fieri (objectum enim sensibile speciem producit, nec tamen sentit). Actio

[1] By his intellect man is ***capable*** of knowing, but the faculty itself does not provide itself with knowledge: potentiality precedes actuality: in itself it is ***intellectus possibilis***, signifying that there must be the power of knowledge before there is actual knowledge. Secondly, this power is « passive » or « receptive » and is not sufficient of itself to determine itself to act. To be brought into exercise it requires some sort of completion, which has been called by Aristotle and the Scholastics ***species intelligibilis***, or, as we had better translate it, a ***cognitional*** or ***intellectual determinant***, because it has to produce in the faculty a modification or determination which makes an intellectual act immediately possible — (**Mercier**, ***Manual***, v. i., p. 249).

igitur intellectus possibilis vindicat esse a principio intrinseco activo, non vero intellectus agentis actio; et hinc est, quod actio intellectus possibilis de se sit immanens, actio vero agentis ex modo suo transiens esse queat. Constat ergo ratio et diversitas utriusque potentiæ, saltem quantum *ad quid nominis* » *(De an.* lib. 4, c. 8).

5°. Ex dictis minime sequitur (sive cum *S. Thoma* affirmas sive cum *Suarez* negas intellectum agentem et possibilem esse facultates realiter distinctas[1]) duplicem esse in nobis intellectionem; « quia ad unum intelligere oportet, quod utraque istarum actionum concurrat » (**S. Th.**, *Q. Disp.*, iv., a. 4, ad 8).

310. Prob. Thesis. Arg. I. Systema scholasticum circa idearum originem admittendum est, 1°. si res materiales habent essentiam; 2°. si hæc essentia potest fieri animæ præsens, seu, potest ei uniri; 3°. si nobis inest vis abstractiva, qua essentia præsens animæ apta reddatur ad unionem cum intellectu; *atqui* hæc omnia habentur; *ergo*.

[1] It was disputed among the schoolmen, in what way and to what extent the *intellectus agens* is to be distinguished from the *intellectus patiens*. The Arabian philosopher Avicenna and certain of his disciples interpreted Aristotle's somewhat obscure language on the point to mean that the *intellectus agens* is « separate » not merely from the human body, but also from each individual soul. They, accordingly, conceived this power, after a pantheistic fashion, as one universal spirit, which in some mysterious way operates on the passive or recipient intellects of men. This gratuitous and fanciful hypothesis was unanimously rejected by the schoolmen, who all deny to the *intellectus agens* any existence separate from the individual soul. But here the agreement ends. The majority conceive the *intellectus agens* and the *intellectus patiens* as two real subjectively distinct faculties of the soul on the ground that they are opposed as agent and patient, mover and moved. The function of the one, it is urged, is to effect the *species impressa,* while that of the other is, when thus modified, to apprehend. Other scholastic philosophers, however, argue very forcibly against this multiplication of faculties, as excessive. They object that the hypothesis of two intellects is unnecessary, and they maintain that these terms only designate different aspects or aptitudes of the same power. The name, *intellectus agens*, denotes the mind as capable of modifying itself, whilst the *intellectus patiens* signifies the same mind considered from the other standpoint as capable of being modified. In this view they are subjectively merely virtually distinct powers — (**Maher**, *Psych.*, p. 309).

Major complectitur requisita omnis cognitionis, *scil.*, facultatem, objectum eidem proportionatum, et utriusque unionem.

Prob. min. 1°. Omne ens reale, et per consequens, omnis res materialis, habet id, quo a parte rei constituitur id, quod est *(i. e.,* essentia), *v.g.,* hæc arbor habet rationem entis, substantiæ, vitæ, vegetantis, quæ omnia ei ut prædicata quidditativa tribuuntur.

2°. Essentia rerum materialium fit præsens animæ mediante sensatione, quæ eas, prouti sunt in concreto, attingit; facultates enim non sunt potentiæ mutuo independentes, quum omnes in eodem principio (anima) radicentur, et sint veluti instrumenta, quibus anima operatur; ex quo sequitur objectum, quod una facultate apprehenditur, eo ipso fieri reliquis facultatibus aliquatenus præsens; ac proinde res sensibiles sensibus et phantasia apprehensas satis præsentes evadere, ut circa eas intellectus proprias suas operationes exerceat.

3°. Anima habet vim exprimendi essentiam sine notis et conditionibus individuantibus, non per acceptionem unius præ alio ex duobus, sed per naturalem determinationem ad repræsentandam quidditatem sine notis et conditionibus, quibus in concreto afficitur, quemadmodum visus naturalem aptitudinem habet ad menti exhibendum rei colorem sine ceteris accidentibus.[1] Est enim «de natura facultatum cognoscitivarum, ut, quando obversatur ipsis aliquod objectum, unaquæque consideret in ipso objectum proprium et formale, ceteris, quæ in ipso sunt

[1] The reader must be careful to distinguish two forms of «abstraction» in the scholastic account of the process. The first consists of the initial act spontaneously exerted by the *intellectus agens*. It is *instinctive*, being preceded by sensuous but not by intellectual cognition. It is called «abstraction», because it *effects* the *abstract* representation of the concrete object. It is not preceded by but productive of the abstract concept. In the second stage the intellect already in possession of the representation consciously adverts to the essential features contained in it, whilst it deliberately ignores or withholds attention from concomitant accidents. The first stage is an act of *instinctive election* by the intellect, the second is one of *conscious selection* — (**Maher**, p. 310).

et quæ sunt objecta *per accidens,* non consideratis; ita ut totum objectum sit *animæ* præsens, sed non totum præsens sit singulis facultatibus in ratione *objecti* cogniti. Objectum autem proprium et formale intellectus est universale, ut sæpe dictum est et omnes concedunt. Ergo sicut in objecto sensibili visus considerat colorem, et gustus saporem, non considerata substantia ipsius sensibilis, quæ est objectum per accidens talium sensuum; ita intellectus considerat *universale* in *sensibili,* seu, ut ait S. Thomas (1, q. 84, a. 7), *speculatur naturam universalem in particulari existentem,* non consideratis notis individuantibus ejusdem rei, quæ sunt objecta *per accidens* ipsius intellectus. Ergo primitivæ ideæ universales formantur ex sensibilibus virtute abstractiva intellectus, quam virtutem abstractivam alibi diximus esse ipsum intellectum *agentem* scholasticorum » (**Zigliara**, *Psych.*, p. 287).

II. — Modus operandi facultatum debet esse conformis naturæ entitatis, e qua dimanant; rei enim natura est principium facultatum et operationum. *Atqui* intellectus humanus dimanat ab anima spirituali naturaliter conjuncta cum corpore ad completam naturam constituendam; *ergo* naturale est, ut corpus aliquo modo concurrat ad propriam intellectus operationem. Jamvero, ad operationem immaterialem corpus non potest concurrere *intrinsecus,* quum in operando non possit excedere naturam suam; restat igitur, ut concurrat *extrinsecus,* quatenus nimirum facultates corporeæ subministrant materiam, in qua relucet proprium objectum intellectus.

311. *Thesis confirmatur* ex ordine, qui ubique viget inter vires naturales. Nam vires, quæ in natura explicantur, ita ad invicem se habent, ut inferiores superioribus inserviant. Sic, vires physicæ et chimicæ, quæ ad regnum minerale pertinent, inserviunt viribus vegetativis in suis operationibus peragendis; vires vegetativæ viribus sensitivis inserviunt, formando, sustentando et resarciendo earum organa; vires sensitivæ, a fortiori, inserviunt viribus intellectivis, eo, quod omnes vires hominis in eadem anima radicantur et in commodum ac perfectionem totius

ordinantur. *Atqui* intellectus, quum sit facultas immaterialis, nullum potest quoad suum *esse,* a facultatibus materialibus accipere subsidium; restat igitur, ut quoad *operari* ei subveniant, præbendo objecta, ex quibus cognitiones suas exhauriat.

312. Schol. 1. — Licet scholastici fere omnes existentiam intellectus agentis agnoscant, nonnihil tamen differunt circa modum, quo phantasma cum ipso concurrat in productione speciei impressæ. Quidam enim docent intellectum agentem esse totalem causam efficientem speciei, phantasma vero esse occasionem tantum et quasi *causam exemplarem.* Phantasma, inquiunt, utpote materiale, non potest producere, ne per modum quidem instrumenti, rem spiritualem, *scil.,* speciem impressam; est tamen causa quasi exemplaris, quia, præsente phantasmate, intellectus agens *dirigitur* et *excitatur* ad producendam in intellectu possibili speciem conformem objecto, quod in phantasia depingitur (cf. *Boedder,* Psych., *th.* 18; *Willems,* Psych., p. 322). Alii docent phantasma in productione speciei impressæ concurrere in ratione *causæ instrumentalis;* secus, inquiunt, poneretur doctrina fundamentalis innatistarum. Si enim intellectus agens ad meram præsentiam phantasmatis valet per se solum speciem impressam efficere, insunt nobis imagines rerum omnium sed quasi sopitæ, donec præsentia phantasmatum excitentur.[1]

313. Schol. 2. — Diversitas aptitudinis in intelligendo, quæ in hominibus conspicitur, non internæ intellectuum

[1] « Phantasma vel concurrit ut causa principalis, vel ut causa instrumentalis, vel ut occasio. Jamvero, primum et tertium adstrui nequit: ergo remanet secundum. Nequit admitti primum, quum phantasma sit ordinis inferioris ac facultas immaterialis, quæ actuari debet forma intelligibili. Nequit admitti tertium, nam si nulla esset actio rerum in animam, sed ad præsentiam sensibilium anima similitudines eorum in se formaret, ipsa esset sibi totaliter causa scientiæ. Et sic, ut scienter argumentatur Angelicus, reverteremur ad ideas innatas. Siquidem quum nullum agens agat, nisi secundum quod est actu, si anima formaret in se similitudines rerum, oporteret quod in se actu illas haberet, et sic scientia esset nobis naturaliter insita » — (**De Maria,** *Psych.,* p. 366; cf. *Mercier,* Psych., v. ii., n. 183; *Van de Woestyne,* v. ii., p. 355).

differentiæ in perfectione, sed inferioribus potentiis, quibus intellectus ad suam operationem indiget, tribuenda est. « Illi enim in quibus virtus imaginativa et cogitativa et memorativa est melius disposita, sunt melius dispositi ad intelligendum » (**S. Th.**, 1, q. 85, a, 7). Ibidem vero S. Doctor hanc differentiam ipsi intellectui tribuere videtur; scribit enim: « quum in hominibus quidam habeant corpus melius dispositum, sortiuntur *animam majoris virtutis in intelligendo* ». Atvero, ut bene notat **Schiffini**, « hoc dictum Aquinatis duplici interpretationi subjicitur. Primum, quatenus, pro diversa complexione corporum diversorum hominum, una anima sit *majoris perfectionis substantialis* quam altera, ex quo fiat consequens, ut ipsa potentia intellectiva *secundum se* perfectior sit in uno quam in altero. Atqui hæc interpretatio non cohæret neque cum veritate, neque cum iis, quæ expresse alibi docet S. Thomas. Nam, ex mente S. Doctoris, perfectio substantialis rei cujuslibet dicitur sistere in indivisibili, quatenus in eadem specie a diversis individuis non participatur secundum magis et minus. Fide autem et ratione constat omnes homines esse ejusdem speciei specialissimæ. Hinc (3, q. 69, a. 8, ad 3) S. Doctor hæc habet: « Dicendum quod diversa capacitas naturalium in hominibus *non est ex diversitate mentis,* . . . quum omnes homines ejusdem speciei existentes in forma conveniant, sed *est ex diversa dispositione corporum* ». Dicendum est igitur, quæ est altera interpretatio, ob diversam complexionem corporum enasci *habitum quemdam naturalem in ipsa mente,* quo evadat magis minusve apta ad propriam operationem; quamvis nulla sit inæqualitas entitativæ perfectionis nec in substantia animæ, neque in mente, prout est potentia naturalis » *(Psych.,* p. 503. Cf. hac de re *Urraburu,* Ont., p. 273, Psych., v. ii., p. 681).

Schol. 3.— Animæ separatæ non cognoscunt per abstractionem a phantasmate, sed per species hic acquisitas et conservatas, et per species divinitus infusas. Modus enim operandi sequitur modum essendi. Habet autem anima alium modum essendi, quando unitur corpori, alium

vero, quando ab eo separatur; sequitur igitur, ut alius quoque sit ejus modus cognoscendi.[1] Utrum intellectus agens ullum exerceat munus in anima separata, controvertitur inter scholasticos. Alii putant eum etiam in statu separationis species intelligibiles aliqua ratione illustrare. Alii vero censent nullam ei competere operationem, donec anima iterum cum corpore conjuncta, phantasmata habeantur, circa quæ deinde suam vim abstrahendi species exercere possit.

CAPUT SECUNDUM.

De Voluntate.

314. Sicut ad appetenda bona corporea et individua

[1] When by death the soul has been left in its state of pure intellectual substance, though still with a constant inclination to its former body, it will then be capable of pure intellectual speculation without having recourse to the medium of the senses and to the material images which in life accompany all our thoughts. The images or representations of things in our minds will then be altogether spiritual, such indeed as are proper to angelic spirits who, being free from matter in their essence, are also free from every concurrence of material phantasms in their speculations. The mode in which angels derive spiritual images will then also be the mode in which the human soul will derive them, so that the moment it departs this life it receives immediately from God an influx of intellectual images in the contemplation of which it will perform its intellectual operations. Whence it follows that the soul, after death, will not, as in the present life, have to go out of itself, as it were, in order to know the things of this world, but it will, by these intellectual inward images, arrive at the knowledge of outward things. As regards its own self, no such image will ever be necessary in order that the soul may contemplate its own being: but by an immediate introversion it will intellectually feed upon itself, just as if the material light were able to see itself, it would do so without the intervention of any other light. And in this spiritual light, which is the soul's very essence, it will also naturally see God, in so much as it is in itself a spiritual reflection of the Deity — a wonderful process of which we are incapable of forming an exact idea in the present state of union of soul and body. And yet such a process will naturally flow from the very state of our soul after death, since without the infusion of those spiritual images it would be in a state of complete inactivity and would have no mental operation whatever, a thing contrary to its very nature — (**Lépicier**, *The Unseen World,* p. 116).

sensu apprehensa pondere naturæ inclinamur, ita naturalem experimur tendentiam ad prosequendas illas rationes immateriales, quas in suo objecto proportionato intellectus detegit vel exinde deducit ope analogiæ aliusve hujusmodi mediis; amamus enim seu appetimus veritatem, justitiam, sapientiam, beatitudinem, etc., realitates, nimirum, quas intellectus solus attingere potest. Facultas autem, quæ talia appetit, dicitur **Voluntas**, et definitur: *facultas spiritualis, qua ens intelligens tendit in bonum intellectu cognitum.*

Dicitur 1°. *facultas* **spiritualis**, quia, non secus ac intellectus, est a materia et materiæ conditionibus independens. *(a)* Appetit enim bona pure spiritualia *(v. g.,* beatitudinem, virtutem, scientiam) eisque maxime delectatur; necnon bona materialia, sed sub ratione *immateriali,* ut quum ex obedientia quis sumit cibum insipidum, vel lætatur in rebus pulchris, non propter sensitivam, sed potius propter *spiritualem* delectationem; *(b)* in seipsam et suos actus reflectit se amando, volendo se velle, suos actus dirigendo; *(c)* in suis actibus a nullo bono particulari, a nulla vi materiali, necessitari potest.

Jamvero, *(a)* facultas organica nec bona spiritualia appetere potest nec bona materialia modo immateriali;[1] *(b)* in seipsam reflectere nequit; *(c)* vi materiali necessitari potest; voluntas igitur non est organica sed spiritualis.

[1] The limits that circumscribe our volitional life exactly correspond to those that encircle the intellect. Were our will an organic faculty, it would display itself in the same manner as the sensuous appetite. . . If the will were an organic faculty, how could we desire such things as honour, virtue, equity, and many others that in no way excite the organs or the nervous system? Nevertheless, the will feels itself attracted by them: an attraction which is often more powerful than that exercised by a sensible object. And how can the will be an organic faculty since it has the power of directly counteracting the sensuous stimulus? How often does the will feel an aversion from things that are most agreeable to the sensible nature! How often, on the other hand, does it energetically strive after things from which our lower nature shrinks back in horror! — (**Fell.** *The Immortality of the Human Soul,* p. 30).

Dicitur 2°. *qua ens intelligens tendit in* **bonum**, quia voluntas realiter distinguitur ab intellectu; licet enim idem habeant objectum materiale, modo tamen specifice diverso circa illud versantur, quum intellectus illud attingat ut *verum*, voluntas autem ut *bonum*, objecta, *scil.*, specifice distincta.

Dicitur 3°. **intellectu** *cognitum*, ut voluntas ab appetitu sensitivo distinguatur, qui pro fine habet appetere bona sensibilia, præcise ut a sensu proponuntur.

De voluntate in duobus articulis agemus, quorum primus erit de ejus objecto et actibus, alter vero de ejus libertate.

ART. I.

DE OBJECTO ET ACTIBUS VOLUNTATIS.

§ 1. De Objecto Voluntatis.

315. Bonum dumtaxat, sive reale sive apparens, potest esse objectum voluntatis. Ratio asserti est obvia: nulla enim natura potest sibi suæque perfectioni adversari; id autem, quod naturæ appetentis est perfectivum, est illi conveniens seu bonum; *ergo* omne id, in quod tendit natura quælibet, oportet esse bonum. Potest utique voluntas versari circa malum et quidem actu positivo, ast non actu *prosecutionis*, sed *aversionis*. Porro, voluntas potest malum *indirecte* appetere, quatenus cum bono, quod directe appetitur, aliquod malum conjungitur, ut cum aliquis vult laborem, quocum nectitur, ut consequens, corporis debilitas. Denique, voluntas appetere potest non solum hoc vel illud bonum, hunc illumve ordinem bonorum, nimirum, bonum creatum vel increatum, bonum materiale vel spirituale, sed omne prorsus bonum. Jamvero, *bona particularia* constituunt objectum *materiale* voluntatis: ejus objectum *formale* et *adæquatum* consistit in *bono universali*. « Objectum voluntatis (inquit S. Th.) est universale bonum, sicut objectum intellectus est uni-

versale verum. Ex quo patet quod nihil potest quietare voluntatem hominis nisi bonum universale » (1, 2, q, 2, a. 8).

Bonum, quod *movet* voluntatem debet habere rationem finis; nam illud tantum potest voluntatem ad actum movere, quod est propter se appetibile; bonitas enim, quæ medio, *qua tali,* competit, a bonitate finis derivatur; unde, sublato fine, tollitur amor medii. Dicimus *qua tali,* quia medium, prout habet suam propriam entitatem, rationem finis habere potest, et sub hoc respectu potest voluntatem movere.

316. **Consectaria.** —1. Quum proprium voluntatis objectum sit bonum universale, necesse est, ut primaria voluntatis tendentia sit in bonum, quod omne bonum complectitur, *scil.,* in objectivam beatitudinem. Quare, omnis actus voluntatis circa bona particularia, ut objecta ejus secundaria, fundatur in illo appetitu beatitudinis objectivæ, ita ut, istius appetitu dempto, dematur omnis appetitio voluntatis.

2. Voluntas in omni actu suo tendit in aliquem finem. Voluntas enim non potest tendere in bonum nisi a bono moveatur; bonum autem, quod movet voluntatem, est finis. Finis præterea est prima inter causas *(Ont.,* n. 432, 3°). Unde, dari nequit actus, qui dicitur *neuter,* qui, nimirum, nec circa finem nec circa medium versetur.

3. Potest intellectus ipsam voluntatem ejusque actum ut bona quædam apprehendere; potest deinde voluntas seipsam et suam volitionem velle et diligere, non secus ac intellectus suam intellectionem intelligit.

4. Ex eo, quod objectum voluntatis est bonum universale, intelligitur, cur voluntas, secus ac appetitus sensitivus, non distinguatur in concupiscibilem et irascibilem. Bonum namque secundum universalem ejus rationem refertur ad voluntatem, sed nonnisi secundum rationes particulares ad appetitum sensitivum.

5. Voluntas est facultas passiva simul et activa: *passiva,* quia aliquo modo movetur et specificatur ab objecto per intellectum proposito; *activa,* quia libertas ejus in eo est,

quod ad agendum non aliunde determinatur, sed seipsam determinat.

§ 2. De Speciebus Actuum Voluntatis.

317. Voluntas considerata simpliciter ut *appetitus*, habet illas undecim species actuum jam recensitas (n. 258); hi tamen actus, prout voluntati conveniunt, non sunt passiones, quia, utpote actus facultatis spiritualis, non includunt mutationem corpoream, quæ est passionis propria, nec versantur circa bonum et malum sensu percepta, sed circa ea, prout intellectu apprehenduntur. Propriæ autem species actuum voluntatis sunt illæ, quæ ei conveniunt ut est *voluntas*, i.e., appetitus *intellectualis*. Actus voluntatis sic consideratæ dividi possunt *ratione objecti, subjecti, modi*.

1°. **Ratione objecti** (i.e., *finis* et *media* ad finem), habetur *(a) amor simplex* (seu *volitio), intentio, fruitio* circa finem, *(b) consensus, electio, usus* circa media. Ratio divisionis: *(a)* Circa bonum propositum voluntas aut simpliciter complacet sibi *(volitio)*, aut illud per media apta assequi conatur *(intentio*[1]*)*, aut in illo obtento quiescit *(fruitio). (b)* At ut voluntas finem assequatur, necesse est, ut ei præsto sint media congrua. Congruitas mediorum detegitur per consilium rationis practicæ. Mediis ut aptis ad finem obtinendum voluntas *consentit;* et ex illis unum vel plura *eligit;* tandem, ut ad finem perveniat, facultatibus sibi subditis *utitur* circa medium vel media electa.

2°. **Ratione subjecti**, a quo actus procedit, habetur *actus elicitus* et *actus imperatus*. Actus *elicitus* voluntatis est *ille, qui a voluntate immediate procedit ut a sua causa efficiente*, v.g., actus amoris, odii, etc. Actus *imperatus* est *ille, quem aliqua facultas exsequitur sub influxu voluntatis*, v.g., actus sensuum et intellectus. Tales actus, ut patet, non *interne* sed *externe* sunt voluntatis. Voluntas autem potest sibi ipsi actum imperare (v. g., *volo Deum amare);* qui actus est et imperatus et elicitus a voluntate.

[1] « Non solum ex hoc *intendere* dicimur sanitatem, quia volumus eam, sed quia volumus ad eam per *aliquid aliud* pervenire » — (S. Th., I, 2, q. 12, a. 1, ad 4).

Obs. — Multum disputatur, utrum *imperium* sit *formaliter* actus voluntatis an intellectus (cf. *Urraburu*, Psych., v. iii., p. 180). Sed revera imperium ad utramque pertinet, sed non eodem modo. Ratio enim imperat, quatenus exhibet motiva, quibus voluntas ad agendum alliciatur : imperat igitur *per modum causæ finalis*. Voluntas imperat, quatenus facultates vel membra applicat ad actum exsequendum, et proinde imperat *per modum causæ efficientis*.

3°. **Ratione modi**, quo actus ponitur, habetur actus *liber*, qui ante suam positionem penes voluntatem manet; et actus *necessarius*, quem voluntas ita ponit, ut non possit illum non ponere. Talis est actus, quo beati Deum amant.

318. De imperio voluntatis in facultates. Duplex est imperium, *politicum* alterum, alterum *despoticum*. Imperium est *politicum*, si imperatum habet aliquid proprium, quo dominio imperantis resistat; si vero imperatum vi resistendi caret, imperium dicitur *despoticum*. Jamvero, homo, mediante sua voluntate, alios suarum facultatum actus imperio despotico, alios imperio politico, alios nullatenus, imperat. Nam : —

« *(a) Actus ipsius voluntatis* circa fines speciales *(v.g.,* actus amoris Dei, odii peccati, etc.) nobis imperio despotico imperare possumus. Sed nobis imperare non possumus inclinationem in bonum, quia hæc nobis est naturaliter necessaria.

« *(b) Actus intellectus,* stante rationis usu sufficienti, imperio despotico nobis semper imperare possumus *quoad exercitium*. Ita, *v.g.,* qui mentem serio vult applicare ad ea, quæ legit vel audit, ei intellectus numquam resistit, quamquam fieri potest, ut hæc facultas propter malum statum facultatum inferiorum mox ad alia distrahatur. Actus intellectus *quoad specificationem* nobis imperare non possumus ita, ut, *stante intellectus ad certum objectum attentione perfecte eadem,* voluntatis motu intellectum adigere possimus ad veritatem circa illud objectum apprehendendam vel non apprehendendam. Attamen in rebus non evidentibus eosdem actus *politice* nobis imperare possumus *etiam quoad specificationem,* quatenus, *scil.,* attentionem libere figimus in iis, propter quæ bonum vi-

detur uni opinioni potius adhærere quam alteri. Immo, in rebus etiam evidentibus, quando non tanta evidentia habetur, ut ne imprudentis quidem dubii locus relinquatur, homo voluntate libera intellectum movere potest, ut ad solas rationes futiles attendat et ita imprudenter opinetur id verum esse, quod ipsi gratum est.

« *(c) Actus appetitus sensitivi* imperio *despotico* domare non possumus, idque ob duas rationes : *(a)* quia motus appetitus sensitivi magnopere pendent a dispositione corporis ; *(b)* quia hi motus rationis advertentiam sæpe præveniunt. Attamen imperio *politico* voluntatis liberæ appetitus tum concupiscibilis tum irascibilis vere subest, sufficienti enim rationis usu supposito, actibus utriusque non solum consensum negare, sed etiam utrumque variis modis libere oppugnare possumus.

« *(d) Motus eorum membrorum, quæ continent musculos voluntarios (v.g.*, manus et pedes), homo sibi *despotice* imperare potest, quamdiu organismus non est læsus. Eadem membra etiam solo impetu appetitus sensitivi moveri possunt, sed non ita, ut hic appetitus effectum imperii voluntatis *actualiter* imperantis impedire possit.

« *(e) Actus vitæ vegetativæ* proprie non subsunt imperio voluntatis. Attamen voluntate libera hi actus aliquatenus regi possunt, quatenus reguntur actus aliarum facultatum, qui in eos influunt. Etenim processus vegetationis diversimode se habet, prout quis cibum sumit, qui ei conveniat, aut cibum ipsi minus congruum, prout eum bene masticat vel citius deglutit, prout exercitia corporalia suo tempore subit vel ab iis abstinet. Quæ omnia multum pendent a libero voluntatis imperio » (Boedder, *Psych.*, n. 432).

319. Distinctione facta inter necessitatem *intrinsecam*, quæ est *invincibilis ac naturalis determinatio ad unum*, et necessitatem *extrinsecam* seu *coactionem*, quæ est *impulsus alicui impressus contra naturalem ejus inclinationem*, quæri potest, num actus voluntatis *cogi* possint ; cui quæstioni *negative* respondendum est quoad actus *elicitos*, *affirmative* vero quoad actus *imparatos*, nisi sint ipsius

voluntatis (n. 317, 2°). Nam actus elicitus est actus intrinsece procedens a voluntate ejusque inclinationi conformis, seu, est actus voluntarie positus; contra vero, actus coactus esset ille, ad quem ponendum voluntas contra suam inclinationem vi externa impelleretur. Deinde voluntas non cadit sub imperio alterius facultatis. Porro, conscientia cuique testatur se minime adduci posse, ut *nolens* interne consentiat vel consensum retrahat.

Actus voluntati externi cogi possunt, seu potius, homo cogi potest, ut agat id, cui voluntas repugnat, et impediri potest, ne agat id, quod interius vult; quia membra corporis, utpote limitatæ virtutis, ab agente fortiori retineri possunt, ne voluntatis imperium exsequantur; quod pariter, si minus agens creatum, certo Deus efficere potest circa actus intellectui imperatos (cf. *Frins,* De Actibus Humanis, v.i., p. 266 sqq.).

320. Alia est quæstio, utrum a Deo necessitari possit voluntas ad volendum objectum, circa quod per se est indifferens Sunt qui negent hoc fieri posse.[1] Alii, ut *Capreolus, Suarez,* præeunte *S. Thoma,*[2] affirmant: *(a)* quia nulla in tali necessitate inducta ostendi potest repugnantia; *(b)* quia secus omissio actionis circa bonum finitum esset in hominis ditione, quantumvis Deus nollet; *(c)* quia Deus potest voluntati imprimere qualitatem operationem necessitantem; *(d)* quia secus humanæ Christi voluntati potestas peccandi inesset. « Nam, non obstante hypostatica unione, objecta omnia in seipsis indifferentia, intellectui Christi clarissime talia objiciebantur; quare, si, stante objectiva indifferentia, non potest libertas auferri, potuisset in voluntate Christi esse libertas ad peccandum, quod horret mens christiana vel cogitare ».

[1] « Si voluntati proponatur objectum ut indifferens ad opposita fieri non potest etiam per absolutam Dei voluntatem, ut in illud absque libertate feratur voluntas » — (**Nazarius,** In 1, q. 19, a. 10. Similiter Bannez et Gonet apud *Pesch,* Psych., v. iii., p. 359).

[2] « Dicendum quod Deus potest *immutare voluntatem de necessitate,* non tamen potest eam cogere » *(Q. Disp.* xi., q. 22, a. 8). Et: « nec potest (causa creata) directe agere in voluntatem, ut eam *immutet necessario* vel qualitercumque inclinet, quod *Deus potest* » *(ib.,* a. 9).

. . . Præterea, « quisquis sit ille modus, quo voluntati Christi erepta est libertas peccandi, non repugnat aliquem similem communicari divinitus cujuslibet alterius hominis voluntati, quo illa, non obstante indifferentia judicii, ad unum necessario determinetur » (**Urráburu**, *Psych.*, v. iii., p. 389; cf. *Frins*, loc. cit., p. 278).

§ 3. De Influxu Intellectus in Actum Voluntatis.

321. Juxta fautores *liberæ cogitationis* voluntas potest quodlibet objectum amplecti, quin ullum præeat judicium, quo illud objectum bonum vel malum esse declaretur. Immo, objectum esse bonum vel malum affirmant, prout in illud tendit vel ab eo recedit voluntas. Quæ opinio reddit voluntatem prorsus irrationabilem, ac funditus evertit discrimen inter bonum et malum (cf. *Sanseverino*, Elem. Phil., v.i., p. 393; *Pesch*, v. iii., p. 374).

322. Scholastici unanimiter docent actum voluntatis præsupponere aliquod rationis judicium, quo, nimirum, objectum pronuntiatur conveniens vel secus. Differunt vero de natura hujus judicii. Alii namque requirunt, ut judicium sit *practicum*, et quidem dictans hoc bonum, omnibus adjunctis consideratis, esse amplectendum. In hac igitur sententia ad actum voluntatis requiritur, ut intellectus judicet non solum aliquid esse bonum et conveniens, sed tale objectum esse hic et nunc eligendum (non quidem ob aliquam obligationem moralem, sed ob irrationabilitatem diutius hæsitandi) idque etiamsi electio sit moraliter mala. Quo posito judicio, voluntas ineluctabiliter fertur ad actum volitionis eliciendum. Hi vero auctores, ut libertas voluntatis intacta servetur, liberam esse voluntatem asserunt in considerando motiva, quibus judicium practicum innititur. Hanc sententiam defendit *Sanseverino*, qui pro eadem stare dicit « S. Thomam et plerosque e schola ejus » *(loc. cit.*, p. 396).[1]

[1] « Bellarminus et multi Thomistæ opinantur ante omnem actum voluntatis vel saltem ante mediorum electionem requiri prævium *judicium practicum* efficax, 'hoc nunc faciendum est', quo judicio voluntas ineluctabiliter determinetur ad illud idem eligendum. Sed tale judicium libertatem tolleret » - - (**Donat**, *Psych.*, n. 362).

323. Quamvis non est negandum judicium practicum electionem voluntatis, præsertim prudentem, sæpissime præcedere, tamen nec ut requisitum ad actum voluntatis, nec ut ejusdem determinativum censendum est. *Primo,* quia libertatem de medio tollit. Nam, juxta hos auctores, posito judicio practico, voluntas libertate privatur; ipsum vero judicium non est liberum, quia, omnibus consentientibus, libertas non est dos facultatis judicandi. Inepte vero affirmant libertatem exerceri in motivis judicii practici considerandis; si enim actus, quo voluntas applicat intellectum ad motiva consideranda, pendet et ipse a judicio practico, habemus processum in infinitum; si non pendet, habemus actum voluntatis, et quidem liberum, absque prævio judicio practico.[1] *Secundo,* voluntas non indiget determinatione ex parte intellectus, sed sponte se determinat ad actum, quando res est ab intellectu sufficienter proposita. « Intellectus (inquit **S. Th.**) regit voluntatem non *quasi inclinans* eam in id, in quod tendit, sed sicut *ostendens* ei objectum, quo tendere debeat » (*Q. Disp.* xi., q. 22, a. xi., ad 5). Jamvero, res est sufficienter proposita, quando intellectus judicat rem esse convenientem et eligibilem; sic enim objectum cognoscitur ut appetenti bonum, et voluntas fit expedita ad libere agendum. Potest utique intellectus, ulterius procedens, motiva pro electione facienda intimius investigare et judicium practicum elicere, post quod tamen voluntas potest objectum respuere; « nam quantumcumque ratio unum alteri præfert, nondum est unum alteri præacceptatum ad operandum, quousque voluntas inclinetur in unum magis quam in aliud; *voluntas enim non de necessitate sequitur rationem* » (*Id., ib.,* a. 15).[2]

[1] Brevius: « Vel judicium practicum ponitur necessario vel libere: si libere, libertas est in facultate imperante judicium et proinde judicium practicum non est inter prærequisita: si vero ponitur necessario, jam tollitur libertas, quum supponatur actum voluntatis necessario sequi — (**De La Vaissière**, *Phil. Nat.*, v. ii., p. 149).

[2] Hanc sententiam inter modernos tuentur ***Urráburu,*** Psych., v. iii., p. 130; ***Pesch,*** Psych., v. iii., p. 374; ***Boedder,*** Psych., 273; ***Schiffini,*** v. ii., p. 604; ***Willems,*** v. ii., p. 378; ***De La Vaissière*** et ***Donat.*** Inter propositiones ex operibus S. Thomæ a S. Studio-

324. Consectaria. 1. Intellectus movet voluntatem *quoad specificationem actus;* voluntas enim non potest appetere nisi objectum, quod intellectus ei proponit; *atqui* actus speciem suam ab objecto desumit; *ergo* ab objecto ut proposito per intellectum *specificatur* actus voluntatis. Eam vero, ut plurimum, intellectus non movet *quoad exercitium,* quia, nisi objectum propositum sit undequaque bonum, integra manet voluntas se determinare ad actum volitionis vel nolitionis.

2. Intellectus est facultas voluntate *simpliciter* nobilior; voluntas enim est facultas cæca, quæ pro omnibus suis actibus indiget prævia intellectus cognitione; intellectus vero proprio lumine gaudet, et in quibusdam suis actibus *(v.g.,* in cognitione principiorum) non pendet a voluntate. Porro, bene vel male moraliter operatur voluntas, prout consilio et directioni rectæ rationis se conformat aut non.

Attamen *secundum quid* voluntas est intellectu partim perfectior, partim minus perfecta. Nam «actio intellectus consistit in hoc, quod ratio rei intellectæ est in intelligente, actus vero voluntatis perficitur ex eo quod voluntas inclinatur ad ipsam rem, prout est in se. . . Quando igitur res, in qua est bonum, nobilior est ipsa anima, in qua est ratio intellecta, per comparationem ad talem rem voluntas est altior intellectu. Quando vero res, in qua est bonum, est infra animam, tunc etiam in comparatione ad talem rem intellectus est altior voluntate. Unde, melior est amor Dei quam cognitio; e contrario autem melior est cognitio rerum corporalium quam amor» (S. Th., 1, q. 82, a. 3). Albertus M., Scotus, S. Bonaventura voluntatem intellectui simpliciter præponunt (cf. *De Wulf-Coffey,* Hist. of Medieval Phil., p. 338. *Van de Woestyne,* v. ii., pp. 519 sqq.)

num Congr. depromptas, vigesima prima sic concludit: «Sequitur electio judicium practicum ultimum: at quod sit ultimum, voluntas efficit».

ART. II.

DE LIBERTATE.

§ 1. De Libertatis Natura.

325. **Radices libertatis** intelliguntur principia ontologica, in quibus innititur libertas. Hæ sunt tres: *remota, propinquior, proxima.*

Radix *remota* libertatis est intellectus *immaterialitas;* nequit enim intellectus diversas res ut bonas voluntati proponere, nisi prius cum fine intento eas comparet. Jamvero, talis comparatio postulat facultatem immaterialem, quippe quæ sola potest notiones abstractas et rerum relationes concipere. Præterea, bona proposita sæpissime sunt spiritualia.

Radix *propinquior* consistit in intellectus *universalitate* in cognoscendo et judicando. Nam bona ad finem consequendum apta inter se comparare potest intellectus, singillatimque voluntati proponere non ut necessario appetenda, sed ut indifferenter eligibilia. « Ex hoc voluntas libere potest ad diversa ferri, quia ratio potest habere diversas conceptiones boni » (S. Th., 1, 2, q. 17, a. 2, ad 1). Recte igitur ratio dicitur *causa* libertatis.

Radix *proxima* est *capacitas* voluntatis ad bonum universale, et, quod consequens est, ejus eminentia super bona particularia. Unde, *immediatum* et *formale* subjectum libertatis est *sola voluntas*. Dicimus « formale », quia *denominative* tantum et *extrinsece* libertas ceteris facultatibus tribuitur, quatenus nimirum imperio voluntatis subsunt.[1]

[1] There is only one faculty of man which is endowed with freedom: our rational appetency or will. All the other faculties are governed by the same necessity which characterizes the operations of an electrical apparatus. . . It must be remarked, however, that the actions of said faculties are sometimes denominated free. Thus we say, that we freely move our limbs, that we freely look at the objects around us. But freedom, thus predicated of the actions of the eye, arm, etc., is only an extrinsic denomination of these actions. It is not my arm choosing to move, but my will choosing to move the arm, etc. The movement of the arm is only an *object* of free choice, and thus by an analogous use of the term extrinsi-

326. Libertatis definitio. —Libertas generatim est *immunitas a subjectione.* Quæ immunitas potest esse *moralis,* seu, immunitas a lege morali aliquid mandante vel prohibente *(libertas moralis)*; vel *physica* seu immunitas a determinatione sive ab extra impressa *(libertas a coactione)* sive naturaliter habita. Hæc naturalis immunitas dicitur: *(a)* libertas *psychologica,* quia ad naturam animæ pertinet; *(b)* libertas *arbitrii,* quia «nihil aliud est quam vis electiva» (S. Th., 1, q. 83, a. 4); *(c)* libertas *indifferentiæ,* quia voluntas non trahitur in unam partem, sed indifferenter se habet ad plura; vel simpliciter **libertas,** quæ definitur: *ea proprietas, qua voluntas, positis omnibus ad propriam ipsius determinationem prærequisitis, in sua potestate habet agere et non agere.*

Dicitur 1°. *proprietas,* quia libertas non est facultas a voluntate distincta, sed quidam ejus modus agendi, et proinde non affirmatur voluntatem esse facultatem *liberam* tantum et non etiam *naturalem (i.e.,* ex naturali necessitate agentem); habet enim, præter actus liberos, etiam actus necessarios.

Dicitur 2°. *positis omnibus. . . prærequisitis,* quia talis est omnis facultatis indoles, ut præter virtutem agendi requirantur quædam conditiones præviæ, quibus non datis, facultas in actum prodire nequit, quibus vero datis, proxime expedita fit ad agendum. Quæ prærequisita respectu voluntatis partim se tenent ex parte intellectus proponentis objectum ut appetibile quidem, sed non sub omni respectu;[1] partim ex parte Dei volentis aptum con-

cally denominated free. My will alone chooses, and therefore my will is *really endowed* with freedom or intrinsically denominated free — (Cruender *Free Will,* pp. 11 sqq.).

[1] Liberty or freedom of the will is not a power but an incident of a power; it is annexed to the condition under which the power of rejecting evil and choosing good is exercised; which condition is this, that sheer good must not be rejected, nor sheer evil chosen. Sheer good to a person is that which thoroughly meets the requirements of his nature; and sheer evil that wich meets those requirements in no way whatever. But the objects with which the human will is ordinarily conversant are neither sheer good nor sheer evil: they are good and evil mixed: they partly satisfy us

cursum præbere. Actualis concursus non est conditio prævia, quia non distinguitur ab ipsa actione, sed in ea ut elementum essentiale includitur.

Dicitur 3°. *voluntas in sua potestate habet agere et non agere,* quia in hoc consistit differentia inter facultatem liberam et necessariam, quod in priori, secus ac in altera, carentia actus componi possit cum omnibus prærequisitis ad agendum. In eo enim præcise consistit essentia libertatis, quod voluntas talem *intrinsecam indeterminationem* ad actum habeat, ut plenum sui actus retineat dominium. Ultima pars definitionis non est intelligenda, quasi facultas *possit agere et non agere simul,* quod aperte repugnat; sed quatenus *simul* habet virtutem ad utrumque expeditam, *i.e.,* dum agit, retinet expeditam virtutem non agendi. Unde, libertas in abstracto definiri potest: *interna indifferentia facultatis, quæ in sensu composito prærequisitorum potest agere et non agere.*

327. Obs. — Sunt philosophi et theologi, imprimis ex Ordine Prædicatorum (quia inter prærequisita ad agendum postulant prædeterminationem divinam, qua, inquiunt, voluntas ita determinatur ad actum, ut sub illius influxu non potest non agere, aut aliter agere quam secundum præmotionem acceptam), qui expositam definitionem aut non accipiant, aut solummodo in « sensu diviso», ut aiunt *(i.e.,* non habita divina præmotione facultatis), verificari posse autument. Hi igitur libertatem definiunt: *facultas electiva mediorum servato ordine ad finem.* Quæ definitio in claritate quodammodo deficit, quum non satis in ea, utpote desumpta a «termino ad quem», declaretur modus, quo facultas agit: cujus modi expositio, quando de libertate definienda agitur, maxime desideratur. Etenim id præcise quærimus, quid sit illud, quo electio constituatur libera, et cur revera liberi arbitrii esse dicamur; cui quæstioni respondet **S. Thomas** dicendo: «Ex hoc liberi arbitrii esse dicimur *quod possumus unum accipere, alio recusato, quod est eligere*» (1, q. 83, a. 4). Ideo, in libertate definienda oportet significare modum agendi facultatis, quod quidem fit in nostra definitione, in qua expresse declaratur internum dominium volun-

and partly not. In the not being tied fast to such objects of choice that liberty consists which is incident to the faculty or power called the human will — (**Rickaby**, *Free Will ard Four English Philosophers,* p. 81).

tatis in actus suos ac proxima ejus potestas operandi et non operandi.[1]

328. Antiquiores et sane graviores theologi ejusdem Ordinis fere iisdem verbis supra allatis (n. 326) libertatem definiunt. V.g., *Victoria* dicit: « Habere dominium actuum est, quod homo habet in sua potestate, quando agit, non agere, quando non agit, agere et agere taliter vel taliter ». *Capreolus* (princeps Thomistarum dictus) notionem necessarii et liberi sic aperte exponit: « Illud dicitur agens naturale, quod positis omnibus requisitis ad agendum et nullo existente impedimento, quin ipsum possit agere, necessario agit. Agens vero dicitur liberum, quod, eodem modo omnibus positis, ita ut possit agere, non necessario agit sed in ejus potestate est, ut agat et non agat » (cf. hos et alios apud *Schneemann,* De div. gratiæ liberique arbitrii concordia, p. 98).

329. Libertatis divisio. — Duplex datur species libertatis: 1°. Libertas *contradictionis,* seu *exercitii*, qua possumus eligere inter actum et ejus omissionem, ut inter *velle* et *non velle.* 2°. Libertas *specificationis,* qua possu-

[1] At whatever moment and within whatever sphere my soul has the proximate power of acting as an originative cause — whether it *exercise* that power or no — at that moment and within that sphere my will is said to be free. And it remains to show that this definition is precisely equivalent to that which is more commonly given than any other by Catholic philosophers. We do not mean that Catholics are *bound* to this latter definition; for the Church allows considerable latitude of opinion upon the matter. At the same time, she fully permits her children to hold — what for ourselves we do hold — that no view of freewill is altogether satisfactory to the intellect except that taken by the great Jesuit theologians; and we think that their view is becoming every day the more commonly accepted one among Catholics. It is usually expressed thus: *Potentia libera est ea, quæ, positis omnibus requisitis ad agendum, potest agere et non agere.* . . To appreciate its bearing, let us consider any given moment of human action. My soul possesses certain qualities, intrinsic and inherent; certain faculties, tendencies, habits, and the like; and it is solicited by various attractions having respectively their own special intensity, direction, and adaptation to my temperament. In order that my soul may act, nothing more is necessary than that which now exists: *Posita sunt omnia requisita ad agendum.* My will cannot be *free,* say these theologians, unless at this very moment my soul has a real power, at least, of either doing this given act or *not* doing it. They consider, of course, that in a vast majority of cases it has *more* power than this; it has the power of acting with greater or less efficiency in this or that direction. But unless it have, at least, *so much* power as above described, my will is not free at all — (**Ward**, *Phil. of Theism,* v. i., p. 384).

mus eligere inter actus specie diversos. Hæc est duplex: *contrarietatis* et *disparitatis,* prout actus, inter quos electio fieri potest, sunt ad invicem *contrarii* (ut actus amoris et odii, spei et desperationis) vel *disparati*, i.e., qui non sunt directe ad invicem oppositi (ut actus spei et justitiæ).

In libertate *contradictionis* consistit libertatis essentia; libertas *specificationis* non est aliud quam multiplex exercitium libertatis *contradictionis*. Quando enim libertas exercetur circa actus specie diversos, circa unumquemque istorum viget simultanea potestas eum eliciendi et non eliciendi *i.e.,* libertas *contradictionis*.

§ 2. De Libertatis Existentia.

330. THESIS XXXII. — Voluntas humana vera libertate est prædita.

Stat. Quæst. -Qui homini veram voluntatis libertatem denegant, alii in principiis *theologicis,* alii in principiis *philosophicis,* suas theorias fundant. *Lutherani,* aliique acatholici generatim post sæculum xvi. agnoscunt primitivam voluntatis libertatem, at eam ob lapsum generis humani amissam esse docent, ita ut nunc voluntas aliqua necessitate ad agendum trahatur. Hunc errorem, prout theologicum, theologia refellit. Philosophiæ est ostendere voluntatem *de facto* esse liberam. Magna autem est turba eorum, qui ex principiis philosophicis libertatem humanam impugnant. Tales sunt *materialistæ,* qui animam cum corpore vel cum aliqua vi materiæ confundendo, subjectum et radices libertatis auferunt; quibus adjungi possunt *empiristæ* et *positivistæ*. Tales etiam sunt *pantheistæ* docentes omnes actus humanos esse necessarias evolutiones unicæ substantiæ. Quibus addendi sunt *leibnitziani,* juxta quos voluntas semper et necessario sequitur motiva fortiora. Hi omnes *necessitariani* seu *deterministæ* vocari solent.[1]

[1] There are four forms under which determinism presents itself, intending to embrace under this title all the old and the new errors against liberty: physical or physiological determinism, intellectual

331. Prob. Thesis. Arg. I. — Experientia interna constanti et ineluctabili edocemur esse in nobis facultatem, vi cujus tali in nostras actiones dominio fruimur, ut pro arbitrio possimus eas elicere vel non elicere; *atqui* in hoc dominio essentialiter consistit voluntatis libertas; *ergo*.

Prob. maj. Quisque sibi intime conscius est, *antequam agit, dum agit, postquam egit*, se suarum actionum dominio frui. Nam. 1°. *antequam agit,* meditatur quid oporteat agere, quænam motiva adsint cur agat, quænam cur non agat; num debeat se ad agendum determinare juxta

or psychological determinism, metaphysical determinism, and theological determinism.

Physical or physiological determinism considers all our acts, comprising intellective and volitive, as functions of a corporeal organism, and says that our acts are therefore determined by those same internal and external causes to which our organism is subject; so that the food we eat, the air we breathe, the surroundings in which we live, are the determining causes of the human will. . . . Physical or physiological determinism denies free will, because it denies the existence of any activity in the soul distinct from matter, and considers the human will as the result of organic conditions.

Intellectual or psychological determinism, on the other hand, admits the existence of the soul and of its power, but says that the human will is necessarily determined to its acts by the prevalence of the motive or the greatness of the good that the intellect presents to it; so that man acts as he thinks, in the strictest sense of the word. And if it appears to us that he is free, this is because a thousand and a thousand microscopic motives that influence the will escape us — motives too small to be noticed or to leave any impression on our consciousness. . .

Metaphysical determinism denies free will, because this will cannot be reconciled with the principle of causality. A free act, it says, means an act not determined by any cause; but an act not determined by any cause is the same as an effect without a cause; therefore, free choice cannot be admitted without destroying the principle of causality.

In fine, theological determinism denies liberty because it says all the acts of contingent beings, man included, are necessarily determined by God. And it presents itself in two forms: *(a)* the determination of our will is imagined as coming from a blind force that controls everything, such as fate among the ancients, and then we have fatalistic determinism; or *(b)* it is imagined as coming from an omniscient force, such as the divine will guided by infinite prescience, and then we have that determinism which the ancients called predestination — (**Ballerini-M'Loughlin**, *A Short Defence of Religion*, p. 50).

motiva rationabilia, an juxta suas inclinationes irrationabiles, ita ut placitum suum sit ratio agendi.[1]

2°. *Dum agit,* clare cognoscit determinationem ad agendum a sua propria electione libere processisse; in sua potestate esse actum inceptum perficere, illum ad libitum differre, vel ab ipso desistere quandocumque velit, etiam contra decisionem prius statutam.[2]

[1] Consciousness attests that we at times take resolutions which we know to be diametrically opposed to our true interests, whether spiritual or temporal, or to both; that nothing forces us to act in this manner and that we feel at full liberty to choose between two alternatives *equally indifferent*, as for instance, to turn to the right rather than to the left without any special end in view except that of taking a walk. It often happens that we determine to do something only for the pleasure of exercising our free will, without caring to know whether the action we prefer is there and then better for us than its opposite. We are then putting in practice the old saying, «Stat pro ratione voluntas» — (**Devivier-Sasia,** *Christian Apologetics,* v. i., Intro. p. 133).

[2] Let us take the case of moral choice freely sustained in the face of severe pressure. Suppose an angry impulse, a feeling of envy, or an impure image presents itself to me. As soon as I advert to its sinfulness, I deliberately reject the evil thought, and endeavour to direct my attention to something else. But the temptation recurs again and again in spite of my efforts to banish or suppress it; and the victory is only finally secured after a long and painful struggle. Now the most careful introspective observation of my mental processes assures me here that I am exerting and sustaining volitional activity against the preponderant impulse. Further, it forces upon me at each instant the absolutely overwhelming conviction that the alternative choice is *hic et nunc* in my power — that I can, alas! only too easily surrender. It is only by painful, constantly renewed, energetic volition that I can inhibit the sinful inclination. . . The *motive of doing right* undoubtedly attracts me; but the assertion that the cognition of the rightness of resistance converts such resistance into the pleasantest course, or constitutes a motive of such force as to draw me inevitably to the side of virtue, is extravagantly untrue. It is *I myself* who, by continuous painful effort of volitional attention, keep this evanescent idea of duty before my mind and give it what power it possesses. Moral conduct of this kind, is, as Prof. James truly says, *action in the line of greatest resistance.* It is not merely one original momentary act of choice against what seemed to be the strongest motive: it is a series of volitions in opposition to what consciousness continuously assures me is the strongest motive. But according to the determinist, not only the original decision, but each subsequent volition, was inexorably determined by the preponderant attraction, and no other alternative was ever possible to me — (**Maher,** *Psych.,* p. 411).

3°. *Postquam egit,* si bene egit, intime sibi gratulatur pacemque suavem mentis experitur, et semper alias similiter se acturum esse constituit; si male egit, tristitia afficitur, suum opus sibi ipsi pudori et crimini vertit, et aliter deinceps se acturum esse proponit. Sic autem tacitus fatetur se libere egisse; cuique enim evidens est imputabilitatem ad laudem vel ad vituperium minime convenire actionibus, quas agens indeliberate exercuit, vel ita, ut ab eis nullatenus potuisset abstinere.[1]

332. II.—Omnes homines *verbis et factis* semper et ubique palam testantur se libero arbitrio gaudere; *atqui* tale constans et universale testimonium non potest esse aliud quam ipsius naturæ rationalis testimonium, quod in errorem minime potest homines inducere *(Log.,* n. 236). Nam, ex una parte, notio libertatis est fundamentum ordinis moralis et socialis, quippe qui, hac notione ablata, nullam suæ existentiæ rationem sufficientem retinent; ex altera vero parte, notio libertatis humanis cupiditatibus minime favet, sed potius est eis valde repugnans, quum propter hanc notionem homines plurimis officiis ingratis se obstrictos cognoscant.

Prob. maj. 1°. *Verbis. (a)* Omnes enim de plena sua libertate in actu quolibet ponendo vel omittendo loquuntur; *(b)* adhibent alias voces, quæ necessitatem, alias,

[1] If I have voluntarily yielded to some evil temptation, or knowingly done a wrong act, if I have been deliberately unjust, unkind, or dishonest. . . when I reflect upon it I am keenly conscious that my conduct was *blameworthy*. I *condemn* myself for it, I feel *remorse* for it, I judge that I ought to *regret* it, that I am bound to *repent* it. But for acts that have not been thus deliberately performed I do not in this way *blame* myself even though they may have resulted in far more serious injury to others or to myself. Of course I wish that even involuntary actions of mine which may have occasioned harm had not happened; but I do not deem them *culpable* and I judge that I am not bound to *repent* them. The sentence of self-condemnation and the pain of remorse present in the former and absent from the latter cases are due to the assurance that the former were *mine* in the strictest sense, that I *freely* did them, that *unlike the latter,* they were *not* the inevitable outcome of my nature and circumstances, that I *could* have done otherwise — (**Maher**, p. 400).

quæ indifferentiam ac libertatem in agendo exprimunt.[1]

2°. *Factis. (a)* Omnes naturaliter consilia petunt et offerunt, præmiis et pœnis, hortationibus et comminationibus utuntur, ut alios ad agendum incitent vel ab agendo retrahant; *(b)* omnes discrimen essentiale agnoscunt inter actus deliberatos et indeliberatos, inter actum ab amente et eumdem actum ab homine sui compote positum; *(c)* ubique terrarum leges statuuntur, jura proclamantur et exiguntur, pacta publica et privata ineuntur ad quædam sub quibusdam adjunctis obeunda. Nec ab hac loquendi et agendi ratione decedunt ii, qui libertatem humanam ut illusionem theoretice habent.[2]

Jamvero hæc omnia natura sua supponunt homines suarum actionum habere dominium, ita ut pro arbitrio possint agere vel non agere. *Ergo.*

333. III.—Voluntas, quum intellectus cognitionem se-

[1] No fact is more frequently expressed by us than that of personal freedom, both in ourselves and others. What else do such phrases of politeness mean, which are so often on our lips: «if you please», «allow me», «consent», «favour me»? We say that we agree, volunteer, grant; and thus there are numerous other expressions implying freedom — (**Gruender**, *Free Will*, p. 40).

[2] Willingly or unwillingly, we find by experience that three different kinds of operations occur in us: *(a)* operations that occur in us, but are not performed by us — for instance, a blow; *(b)* operations that occur in us, and are performed by us, but not freely — for instance, the circulation of the blood, the process of nutrition: and *(c)* operations that occur in us, and are freely performed by us — as are those which we perform with full knowledge of the mind and perfect deliberation of the will. Now, how can anyone doubt of the existence of liberty in presence of a fact proving the difference that exists between free and not-free acts, between those which happen without deliberation of the will and those which happen with full deliberation of the will? Behold the reason why the human race has always lived, and will always live in this conviction. «Every tongue,» writes Taparelli (Saggio teoretico, n. 47), «that names virtue and vice, merit and demerit, praise and blame, reward and punishment, conscientiousness and remorse; every law that is promulgated, every counsel that is asked, every regret that is expressed, every chastisement that is inflicted, every magistrate that is constituted — all, all speak in favour of human liberty, and show us what is the inmost feeling, not only of the multitude with regard to it, but even of the philosopher who is most obstinate in denying it» — (**Ballerini**, *op. cit.*, p. 54).

quatur, ad agendum necessitari nequit, nisi objectum proponatur ut undequaque bonum et cum felicitate necessario nexum; *atqui* intellectus cognoscit et voluntati exhibet plura objecta nec sub omni respectu bona nec ad felicitatem necessaria; *ergo* circa hujusmodi objecta vera libertate voluntas est prædita.

Prob. min. (a) Intellectus cognoscit et voluntati exhibet bona particularia inter se pugnantia, quæ ideo simul haberi non possunt *(v.g.,* bonum honestum caritatis et bonum delectabile vindictæ), quorum quodque tamen una cum ratione boni aliquem delectum boni et proinde rationem mali præ se fert. Talia igitur bona apprehenduntur ut appetibilia et fugibilia, seu, ut bona, quæ voluntas eligere vel respuere potest.

(b) Intellectus cognoscit bona, quæ ad felicitatem non requiruntur. Cognoscit enim fines et media; inter fines autem distinguit finem ultimum necessario appetendum ut bonum voluntatem plene satians, et fines intermedios, in quorum adeptione voluntas non plene quiescit. Inter media discernit plura, quæ majorem vel minorem convenientiam habent cum fine ultimo, nullum vero medium apparet absolute necessarium ad illum finem attingendum. Jamvero, hæ cognitiones tales sunt, ut hinc voluntas habeat potestatem eligendi, illinc vero potestatem non eligendi, vel unum præ alio pro lubitu eligendi; *atqui* in hac potestate consistit libertas arbitrii; *ergo*.[1]

[1] Every free volition must be preceded by a judgment on the comparative goodness of the various objects of choice. In the language of the Schoolmen this condition was expressed by the statement that free volition must be preceded by *an objectively indifferent judgment*. . . What is meant is a judgment which proposes the pros and cons, the reasons for and against a definite line of action; which, in other words, proposes an object on the one hand as desirable, on the other as not necessary. An objectively indifferent judgment, therefore, involves *two* judgments, the one proposing motives for striving after, the other motives for rejecting the object intellectually apprehended. . . Take, for instance, the judgment stating the desirability of a trip to Niagara Falls . . . Leaving out of consideration the numerous incidental expenses connected with such a pleasure trip, . . . I cannot fail to see that such a trip, though desirable, is not necessary for my happiness,

334. *Thesis confirmatur* ex perniciosis sequelis oppositæ doctrinæ. Hæc enim *(a)* « non solum contrariatur Fidei, sed subvertit omnia principia philosophiæ moralis. Si enim non sit liberum aliquid in nobis, sed ex necessitate movemur ad volendum, tollitur deliberatio, exhortatio, præceptum et punitio, et laus et vituperium, circa quæ moralis philosophia consistit» (**S. Th.**, *Qu. Disp.* II., q. 6).

(b) Subvertit discrimen essentiale inter bonum et malum morale; quia « arbitrio libero sublato, quidquid ab hominibus fit, æqua ferrea necessitate ex eorum natura resultat. *Atqui* quæ ex ipsa hominis natura necessario resultant, fini ejus repugnare nequeunt; eaque, quæ fini naturali hominis non repugnant, non possunt dici moraliter mala. *Ergo* arbitrio libero sublato, nullæ actiones hominum sunt moraliter malæ; quo posito, procul dubio discrimen essentiale inter bonum et malum morale prorsus tollitur » (**Boedder**, *op. cit.*, n. 411).

(c) Subvertit omnem certitudinem; notum est enim diversis immo contradictoriis sententiis firmissime adhærere homines diversos *(v.g.*, defensores et osores humanæ libertatis). Jamvero, si unica ratio, cur homines oppositas sententias tueantur, sit necessarius ac naturalis influxus motivorum, omni libero influxu voluntatis excluso, dicendum est (siquidem oppositæ sententiæ non possunt esse simul veræ) quosdam homines necessario ferri in falsitatem, immo scepticos universales pondere naturæ induci ad omnem certitudinem reprobandam. Nec in data hypothesi relinquitur, qui discriminet, quinam in veritatem, quinam in falsitatem, necessitentur.

335. Obj. 1. — Sæpe fit, ut homines suis passionibus ferantur ad agendum contra propositum voluntatis; ***atqui*** hoc est signum voluntatem non esse liberam; ***ergo.***

Resp. — Sæpe fit, ut sic ferantur ***indeliberate, conc.; deliberate, subdist.***, attractione plus minusve gravi, cui tamen voluntas efficaciter resistere potest, ***conc.;*** . . . cui non potest resistere, ***neg.*** Passiones judicium rationis sæpe præveniunt, quatenus aliquod ob-

and this is a sufficient reason against the choice — (**Gruender**, *Free Will*, pp. 15-16).

jectum appetitui sensitivo placet vel displicet, quin tamen voluntas necessitetur ad tale objectum *actu efficaci* prosequendum vel fugiendum. Nam tale objectum, utpote rationem boni vel mali includens, quamdam complacentiam vel displicentiam in appetitu intellectuali excitat, quam tamen hic pro lubitu reprimere vel fovere potest simul ac ratio advertit (cf. notam, p. 321).

Obj. 2. — Qui docet hominem esse liberum, eo ipso docet posse haberi effectum, quin adsit causa ad hunc effectum producendum ordinata; *atqui* hoc est contra principium causalitatis; *ergo*.

Resp. — *Dist. maj.* . . eo ipso docet posse haberi effectum, quin adsit causa *natura sua* vel aliunde determinata ad talem effectum, *conc.*; . . . quin adsit causa capax seipsam determinandi ad effectum producendum, *neg.* Dari nequit effectus sine causa sufficienti; notio autem effectus nec includit nec excludit ex parte causæ determinationem sive naturalem sive aliunde habitam. Itaque defensores libertatis humanæ non ponunt effectum sine causa, sed causam, quæ effectum producit seipsam ad agendum determinando.[1]

Obj. 3. — Quidquid movetur, ab alio movetur; *atqui* voluntas in omnibus suis actibus movetur; *ergo* ab alio movetur, et proinde non est causa sui motus, seu, non est libera.

Resp. — *Dist. maj.* . . ab alio movetur aliquo modo, nimirum, vel *efficienter* vel *finaliter, conc.*; . . . *efficienter* tantum, *neg.* Pariter *dist. min.* Voluntas in omnibus suis actibus movetur *finaliter, trans.* vel *conc.*; *efficienter, neg.* Voluntas duplici modo moveri potest: *(a) efficienter* seu *physice,* ut quum Deus gratia excitante eam movet et expeditam reddit ad actum supernaturalem eliciendum; (*b*) *finaliter* seu *moraliter*, quando scilicet bono proposito allicitur ad agendum, penes se retinens potestatem huic motioni acquiescendi vel non. Unde, voluntas movetur ab alio, sed non ut a causa necessitante.[2]

[1] Free activity is by no means causeless activity. The free agent himself is in the fullest and truest sense the efficient cause of his free acts. It is by his causal, efficient influence that the act of free choice is determined and elicited — (**Coffey**. *Ont.*, p. 376).

[2] Every true human act, though necessarily done on some motive, is not done according to one motive rather than according to another, except under the conscious superintendence and final arbitrament of the presiding *Ego*. Whichever way the arbitrament goes, it goes upon some reason in particular: the crux of the question is, why upon this reason rather than upon that? Libertarians assert that no « why » of physical determination, like the « whys » of physical science, is assignable; and that, therefore, « moral » science is not, what necessarians make it, a « physical » science. For my own part I should keep out of the way of a man to whom it was the same thing to have a motive, supervening upon a particular disposition, and to act accordingly. Such is the behaviour of som-

Obj. 4. — Testimonium conscientiæ non valet ad probandam libertatis existentiam; nam conscientia testatur actum; libertas autem non est actus, sed indifferentia voluntatis respectu actus; *ergo*.

Resp. — *Neg. assertum*. Ad prob. *Dist antec*. . . testatur actum et modum, quo actus a voluntate procedit, *conc.*, actum solummodo, *neg*. Conscientia renuntiat facta interna particularia; particularia autem existunt his illisve characteribus vestita, sicut objecta visus sunt hujus vel illius coloris. Unde, sicut actus cognoscuntur a conscientia, prout sunt sensitivi vel intellectivi, cognoscitivi vel appetitivi, ita cognoscuntur, prout sunt necessarii vel liberi (cf. *Log.*, n. 203).

Obj. 5. — Si lapis haberet cognitionem, sentiret (sed falso) se esse liberum in sua tendentia versus centrum terræ; *atqui* homo similiter decipi potest circa suam libertatem; *ergo*.

Resp. — In tali hypothesi necessitatem tendentiæ sentiret lapis, sicut nos sentimus necessitatem appetendi ultimum finem.

Obj. 6. — Somniantes, inebriati, insani, hypnotizati, se liberos existimant, et tamen decipiuntur; a pari igitur fieri potest, ut persuasio ceterorum de sua libertate sit mera illusio.

Resp. — *Dist. assertum*. Hi ita existimant propter usum libertatis, quem ante statum somni, etc., habuerunt et perceperunt se habere, quemque nunc recordantes, suas præsentes actiones non liberas confuse imaginantur esse liberas, *conc.*; clare et reflexe cognoscunt se esse liberos, *Neg. Nego paritatem* in consequente adductam; perperam enim ex casibus, in quibus mens caret statu normali, et inepta ad recte judicandum existit, concluditur ad statum normalem, in quo expeditum rationis exercitium habetur. Præterea, sic objicientes aut sciunt se non esse somniantes, amentes, etc., aut nesciunt: si sciunt, stulte metuunt ob illusiones somniantium, etc.; si nesciunt, desinant argumentari donec sciant.

Obj. 7. — Constat ex statisticiis publicis diversa crimina singulis annis patrata fere æqualia esse numero;[1] *atqui* aliter res esset, supposita libertate humana; nam, si homines essent liberi, haud uniformiter agerent, etiamsi adessent motiva ad agendum omnino similia; *ergo*.

Resp. — Uniformitas de qua agitur, non est tanta, quantam de-

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nambulists, of patients in delirium, and of lunatics generally, but not of men in their right senses. A man in his right senses, that is to say, a free agent, is one whose acts are not beyond the command of motives, nor yet wholly within the command of motives. Give a person a motive, and you incline him to act; you do not compel him - (**Rickaby**, *Free Will*, etc., p. 218).

[1] The number of suicides recorded in France between 1849 and 1860 is as follows: 3583, 3596, 3598, 3676, 3415, 3700, 3810, 4189, 3967, 3903, 3899, 4050 — (**Mercier**, *Manual*, v.i., p. 275).

terministæ jactant; quodsi daretur, non ideo esset signum homines ex necessitate hæc crimina patrare, tum quia eadem crimina in adjunctis prorsus iisdem committi possunt cum plena libertate; tum quia ex citata generali uniformitate hoc solum concludi potest tot homines *de facto* eadem crimina patrasse, haud vero concludere licet eos a crimine abstinere non potuisse nec eos tentationibus semel aut sæpius non restitisse.[1] Nec mirum est homines collective in iisdem adjunctis constitutos simili fere modo externe se gerere, quum natura humana ubique easdem passiones habeat. Qua ex causa fit, ut sæpe *morali* (haud vero *physica)* necessitate tentationi succumbat.[2]

[1] It is alleged that *freewill* is disproved... by the evidence of statistics.., The same objection adopted by Mill, Bain, and most other determinists, is evidently considered by them to be one of their most irresistible arguments. Let us first recall the precise point at issue. The defenders of moral freedom maintain that within a certain limited sphere man's volition, and consequently his action, is not inevitably predetermined by his character and surroundings. They admit: *(a)* that his spontaneous or indeliberate acts are merely the outcome of motive and disposition; *(b)* that he can never act without some motive — the most common forms of which being immediate pleasure, permanent self-interest, and duty; *(c)* that even in deliberate or free actions he is largely *influenced,* though not inevitably determined by superior forces of attraction. Thus, a man accustomed to give way to a particular temptation, will very probably yield again — though *freely* — when it recurs. It is now at once evident how easily general uniformity, even in individual conduct, is reconcilable with the libertarian view — (**Maher**, *Psych.*, p. 421).

[2] When from a knowledge of motives we can form a probable anticipation of the behaviour of every individual out of a large body, we possess a practically certain foreknowledge of the behaviour of the generality, which certitude becomes more indefectible as the body is more numerous. This is the foundation principle of the science of human action. The statesman and the public economist are not concerned to decide what this or that particular man will do; their concern lies with the behaviour of the masses. Of them they can be sure: of the individuals they cannot, and care not to be. I bring an example, which I single out because it has been urged as irreconcilable with free will. Suppose the building trade becomes more lucrative than the rest, at once it draws capital from the other trades, until the equilibrium of profits is restored. This occurrence may be looked for as confidently as the motion of water to its level, though the latter is a physical and the former a moral phenomenon. Still no just suspicion is cast on the free will of the capitalist, who rushes into bricks and mortar. The determination to turn builder is not absolutely calculable in the case of any individual speculator. But it is calculable for the ge-

Obj. 8. — Libertas humana reconciliari nequit cum principio conservationis energiæ physicæ, juxta quod nulla vis perit, nulla oritur, sed summa energiæ actualis et potentialis semper constans est; data enim voluntatis libertate, continuo augeretur energiæ quantitas per voluntatis influxum.

Resp. — Exercitium libertatis, quum sit actio spiritualis et immanens, et proinde, qua talis, extra sphæram virium materialium existens, has vires minime afficit. Nec ex eo, quod membra corporis influxu voluntatis moventur, ullum incommodum libertati obvenit; voluntas enim corpus movendo nullam vim novam gignit, sed vires potentiales corporis *excitat, dirigit* et ad opera exsequenda *applicat*. Non *quantitas* igitur, sed tantum *qualitas* energiæ exercitio libertatis afficitur.[1]

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nerality, on the principle of averages, without prejudice to the freedom of the individuals — (**Rickaby**, *op. cit.*, p. 136).

[1] The law of the conservation of energy is an unproved hypothesis. Granted, however, that it represents an established fact, it in no way conflicts with the theory of free will. The reader will remember that we are here dealing with the question of material energy only — energy that can be transformed into motion, for that is the only energy of which the law of conservation can logically take cognisance. Now, where, in the theory of freedom, does this material energy come from, in the case of the moving limb? Our point is that it does not come from the will. The muscular energy that moves our limbs when acted upon by the will comes, not, as our opponents suppose, from the will, but from the limb itself, and from the body generally. When we run, it is the body that grows tired, not the will, because the body has been giving out energy, but the will has not. The energy that is turned into motion, must have existed previously, not in the will, but in the body, and, therefore, on our theory, the sum of material energy in the world is the same after motion as before. Our point then is, that the will may affect the muscles without sending into them muscular energy, and they are incapable of receiving any other kind of energy than muscular. Hence the theory of freedom does not suppose an inflow of energy from the will to the material world.

Our opponents, however, may argue — Your answer only raises an additional difficulty, for even to turn the static energy of limb or muscle into the kinetic energy of motion plainly requires an expenditure of energy in the will, and since this energy cannot be lost, it must go to swell the sum of energies in the material world. *We answer* — to turn static into kinetic requires certainly *activity of some kind* in the will which initiates the change, but it does not require a flow of energy out of our wills into that body, the static energy of which is being turned into kinetic. If we might adopt an illustration from physics — a stone supported above the ground possesses static energy. Remove the support, the static energy is transformed into kinetic, and the stone falls to the ground.

§ 3. De Libertatis Extensione.

336. Ex dictis probata manet libertatis humanæ *existentia;* hic autem de ejusdem *extensione* agitur, *i.e.,* quæritur circa quænam objecta voluntas libertate non fruatur, circa quænam illa fruatur. Jamvero : —

1°. Voluntas necessario fertur, *(a)* in bonum in communi, *(b)* in beatitudinem, *(c)* in omnia cum beatitudine necessario nexa, *(d)* in Deum intuitive cognitum.

Prob. assertum per partes, (a) Voluntas non potest esse libera circa objectum, quod ut bonum nullam rationem mali continens *(i.e.,* solum ut bonum) ei proponitur; secus esset indifferens respectu sui objecti adæquati. *Atqui* bonum in communi est bonum conceptum cum præcisione ab omni limitatione, et proinde cum exclusione omnis rationis mali. « Sicut coloratum est objectum visus, ita bonum est objectum voluntatis. Unde, si proponatur aliquod objectum voluntati, quod sit universaliter bonum et secundum omnem considerationem, ex necessitate voluntas in illud tendit, si aliquid velit » (S. Th., 1, 2, q, 10, a. 2).

(b) Beatitudo est hominis finis ultimus subjectivus seu ultima ejus perfectio; *atqui* omne ens habet naturalem, ideoque necessariam, determinationem in suum ultimum finem et perfectionem; *ergo* voluntas humana necessario fertur ad beatitudinem volendam.

(c) Qui *efficaciter* vult finem, necessario vult ea, sine quibus finis haberi nequit; secus enim efficaciter vellet et non vellet. *Atqui* ita res se haberet, si voluntas, dum necessario vult beatitudinem, libera maneret circa ea, quæ cum beatitudine necessario connectuntur. « Finis

But the will must exercise activity of some kind — some kind, perhaps, of psychical or mental energy. But, whatever may be the active process within the will, it need not in changing static into kinetic energy send energy into the muscle. In all bodily movement, therefore, the material energy of the material world is the same after movement as before — (Cronin, *The Science of Ethics*, v. i., p. 181; cf. *Maher,* Cath. Encycl., Art. Energy).

ultimus ex necessitate movet voluntatem, quia est perfectum bonum; et similiter ea, quæ ordinantur ad hunc finem, sine quibus finis haberi non potest; sicut *esse* et *vivere* et hujusmodi » (S. Th., *ib.*, ad 3). Hæc ergo necessario appetuntur, quamdiu judicantur esse media cum fine ultimo necessario connexa.

(d) Deus intuitive cognitus est bonum, cui nec deficit nec tamquam deficiens apparere potest quidquam bonitatis; in eo igitur voluntas plenissime expletur et beata redditur; *atqui* tale objectum ita trahit voluntatem, ut nulla ratione se avertere queat; *ergo* Deus intuitive cognitus actum voluntatis ex necessitate movet.

337. Obs. — Sequitur respectu boni in communi et felicitatis voluntatem ita esse constitutam, ut ex natura sua ad ea appetenda necessitetur quoad *specificationem actus*. Potest tamen voluntas intellectui imperare, ut de eis non cogitet, et per consequens nullus actus respectu illorum in voluntate excitabitur. Sub quo respectu voluntas *libertate exercitii* relate ad bonum in communi et felicitatem gaudet. « Voluntas movetur dupliciter: uno modo quantum ad *exercitium actus*, alio modo quantum ad *specificationem actus*, quæ est ex objecto. Primo modo voluntas a nullo objecto ex necessitate movetur; potest enim aliquis de quocumque objecto non cogitare, et per consequens neque actu velle illud. Sed quantum ad secundum motionis modum, voluntas ab aliquo objecto ex necessitate movetur, ab aliquo autem non » (S. Th., *ib.*). Et: « Homo ex necessitate appetit beatitudinem. Dico autem ex necessitate quantum ad *determinationem actus*, quia non potest velle oppositum; non autem quantum ad *exercitium actus*, quia potest aliquis non velle tunc cogitare de beatitudine, quia etiam ipsi actus intellectus et voluntatis particulares sunt » (2. *Disp.* II., q. 6). Unde, libertas *quoad exercitium actus*, in quo invenitur ejus essentia (n. 329), non solum circa media, sed etiam circa finem versatur; immo libertas, juxta S. Thomam, habetur « *in quolibet statu naturæ, respectu cujuslibet objecti* » (Q. Disp. XXII. a. 6). Cum hac de libertate doctrina operæ pretium est conferre illam scholæ scotisticæ, quæ pariter docet voluntatem circa quodlibet ejus objectum in quolibet statu naturæ libertate frui. Libertas, sic scotistæ, essentialiter consistit in potestate voluntatis seipsam ad actum determinandi, et quum hæc sit voluntatis proprietas, omnem actum voluntatis semper et ubique comitari debet, ita ut omnis actus voluntatis sit actus liber, et nullus habeatur actus ex *naturali* necessitate proveniens (n. 326). Exinde vero oritur triplex discrepantia fundamentalis inter philosophos scholæ thomistæ et scholæ scotistæ

respectu naturæ, radicis et extensionis libertatis. Et quidem, «1° *natura libertatis* secundum thomistas consistit in indifferentia voluntatis et vi electiva inter objecta; secundum franciscanos in dominio voluntatis in actum suum, ita quod voluntas non indifferens seu carens vi electiva adhuc libera manet et seipsam ad actum determinare potest.

2° «*Quoad radicem,* thomistæ illam inveniunt in imperfectione objectorum cognitorum et activitate intellectus (S. Bonaventura in ratione et voluntate), sed scotistæ in sola voluntate, cujus est facultas se determinandi ad bonum propter se.

3° «*Quoad extensionem,* thomistæ libertatem limitant ad bona particularia imperfecta, vel imperfecte cognita, et ad media eligenda, sed franciscani libertatem extendunt ad omnem actum voluntatis, non excluso bono universali, nec Deo summo bono. Immo quo majus est bonum et perfectior ejus cognitio, eo liberior est voluntas se ad illud determinans. Hinc explicatur, quomodo voluntas Dei sit perfectissimo modo libera, et quomodo Beati perfecta libertate Deum ament, non in sensu quod aliter eligere possent, sed in sensu quod voluntas ad illum amorem se determinat, quia vult amare. Eodem modo intelligitur, quomodo actio quæ est absolute necessaria, nihilominus libera esse possit, quia a voluntate ex propria sua determinatione ponitur» (**Mendorff**, «Antonianum,» Jan., 1926, p. 126; cf. *Van de Woestyne,* v. ii., pp. 468-477).

Ita scotistæ. Atvero est facilius dictu quam intellectu, quomodo voluntas *ex sua propria determinatione* ponat actionem, quæ est *absolute necessaria,* quum actio necessaria sit ex natura sua ita determinata, ut exclusa sit omnis determinatio a parte voluntatis. Talem actionem posse esse et actu esse voluntariam scio et agnosco, quomodo sit simul libera me latet prorsus.

2° **Voluntas libera est** *(a)* **circa omnia bona finita, quæ non habent necessariam connexionem cum fine ultimo,** *(b)* **circa bonum infinitum, prout in hac vita apprehenditur.**

Prima pars uniuscujusque experientia evincitur, et jam antea *(Th.* xxxii.) ratione probatur. Quantum ad *(b)* dicendum est: Objectum afficit et movet voluntatem, prout apprehenditur; *atqui* in hac vita Deus a nobis imperfecte apprehenditur; *ergo* imperfecte etiam afficit et movet voluntatem, *i.e.*, hujus amorem non ex necessitate ad se trahit. Præterea, Deus, licet sit summum bonum, tamen, quia ejus servitium et amor semper aliquid incommodi mentis et corporis adjunctum habent, cum aliqua specie mali voluntati proponitur; qua ex causa voluntas non

necessario sed libere eum diligit; immo, quia non apparet ut bonum omnibus facultatibus satisfaciens, bona finita illi præferre potest voluntas.

3°. Voluntas non fertur necessario *(a)* in id, quod ut melius apprehenditur, *(b)* nec proinde inter bona apprehensa ut æqualia ab eligendo præcluditur.

(a) Leibnitz suique asseclæ, licet non negent libertatem, docent voluntatem per judicium rationis necessitari ad amplectendum majus vel maximum bonum ex illis omnibus, quæ simul proponantur. Atvero, in tali sententia libertas voce dumtaxat relinquitur; electio enim in tali casu, non aliud esset, quam naturalis determinatio ad unum. Præterea, ex parte minoris boni non deest ratio sufficiens, cur voluntas suum actum eliciat; *minus* enim bonum est *verum* bonum, licet deficiens; voluntas autem illud appetit non ut est deficiens, sed prout rationem boni includit. Denique, quum bonum peccati non possit æstimari melius bono virtutis, possibilitas peccandi excluderetur, nisi quidem dicatur omne peccatum errorem in Fide involvere; nam in peccato « is, qui peccat, percipit aliquam rationem boni *delectabilis,* quam non conspicit in bono virtutis. At idem habet in potestate, ut libera electione voluntatis bonum illud admittat, atque ita in actu exercito ipsiusmet voluntatis præferat bono virtutis seu legis divinæ; in qua exercita prælatione consistit tota malitia peccati. Quod si absolute dijudicare deberet actionem inhonestam simpliciter præstare in bonitate actioni præceptæ, illud perspicuum absurdum consequeretur, neminem peccare posse, nisi prius admiserit judicium hæreticum; est enim manifestus error in Fide, absolute et simpliciter præferre per intellectum bonum delectabile bono honesto seu legi divinæ. At contra, exercita illa prælatio, quæ fit per ipsam acceptationem voluntatis, quæque propriam malitiam peccati constituit, ostendit perversitatem voluntatis, non supponit perversionem in Fide » (**Schiffini**, *Psych.*, p. 606).

(b) Buridanus (sæc. xvi.), cui assentiunt *Leibnitziani,*

censuit voluntatem, si duo æqualia bona ei proponantur, neutrum eligere posse. Ad quod probandum attulisse dicitur exemplum asini, qui, inquit, si coram se haberet duos saccos avena plenos et æque appetibiles, neutrum posset adire et fame ibi periret.

Contra hanc opinionem valent argumenta contra priorem allata, quum utrumque bonum habeat rationem boni et appetibilitatis; nec dicendum est voluntatem æquilibrio bonitatis teneri; « nihil enim prohibet, si aliqua duo æqualia proponantur secundum unam considerationem, quin circa alterum consideretur aliqua conditio, per quam emineat, et magis flectatur voluntas in ipsum quam in aliud » (**S. Th.**, 1, 2, q. 13, a. 6, ad 3).[1] Exemplum asini ad rem non facit, siquidem asino voluntas non competit.

§ 4. De Indifferentia ad Libertatem requisita.

338. Essentia libertatis consistit in aliqua indifferentia seu indeterminatione voluntatis ad actum eliciendum. Hic igitur quæritur in quonam reponenda sit illa indifferentia, seu, quænam sit ratio, cur voluntas maneat libera circa bona finita ei obversa. In expositione sequentis thesis diversæ sententiæ hac de re afferuntur.

THESIS XXXIII. — Ad veram libertatem humanam requiritur indifferentia non solum objectiva, sed etiam subjectiva, et quidem non passiva, sed activa et positiva.

Stat. Quæst. — Indifferentia est proprietas, qua potentia aliqua simili modo se habet erga plura. Voces « simili modo », quando agitur de voluntatis indifferentia, non intelligendæ sunt de similitudine æquilibrii seu de æqua-

[1] The will contributes to make a motive preponderant, and gives it its final victory over the other. The will is not like the indicator of a balance, inert and passive, but living and active. It makes a given motive stronger and prevalent. But, it may be asked, why does it do so? Sometimes, because we have « made up our minds », either deliberately and freely, or indeliberately and necessarily. Sometimes, owing to the influence of subjective dispositions and habits. . . Sometimes with full consciousness that it is doing right, or wrong, yielding to the call of duty or to that of pleasure, and doing it freely — (**Dubray**, *Intro. Phil.*, p. 184).

litate propensionum, sed de similitudine indeterminationis, quæ, nimirum, opponitur determinationi ad unum.

Indifferentia afficere potest judicium intellectus circa objectum, vel ipsum voluntatis actum, et secundum hoc duplex distinguitur indifferentia: *objectiva* seu *judicii* et *subjectiva* seu *voluntatis*.

339. Indifferentia *objectiva* in eo consistit, quod objectum judicatur indifferenter appetibile, *i. e.*, non perfecte conveniens naturæ voluntatis, sed partim conveniens, partim non conveniens. Hanc indifferentiam requiri nemo negat, eam sufficere contendit *Bannez,* celeber Ordinis Præd. theologus, juxta quem actus liber est «actus voluntatis *cum judicio rationis indifferente elicitus*».

Indifferentia *subjectiva* se tenet ex parte voluntatis, et est duplex: *activa* et *passiva: (a) activa,* si voluntas inclinari potest ad agendum, ita ut hæc inclinatio sit (partialiter saltem) effectus ipsius voluntatis: et *(b) passiva,* si hæc inclinatio sit tota effectus agentis extrinseci *(scil.,* Dei prædeterminantis). Nonnulli, Bannez posteriores,[1] ad libertatem requiri concedebant indifferentiam subjectivam, sed passivam dumtaxat; «quam ita explicabant, ut voluntas humana de se indifferens sit recipere vel non recipere inclinationem ad objectum bonum propositum; quam inclinationem si accipiat, ad modum passionis a Deo ut causa efficiente, sit determinata voluntas ad unum actum» (**Van der Aa**, *Psych.,* p. 74).

340. Indifferentia *activa* est duplex: *positiva* et *negativa. (a) Positiva* habetur, si voluntas, indifferens quoad actum, non ab alio determinatur, sed vi propria se determinat. *(b) Negativa* habetur, si voluntas ad suum actum eliciendum requirit motionem divinam eam ad actum determinantem. Alii tandem admittunt ad libertatem requiri indifferentiam subjectivam et quidem *activam,* at contendunt sufficere *negativam; positivam* vero nec requiri nec possibilem esse, quia, inquiunt, divina prædeterminatione non præstita, metaphysice repugnat, ut voluntas actum suum eliciat; prædeterminatione autem præstita,

[1] «Aliqui recentissimi idem faciunt» (**Frins**, *op. cit.,* v. i., p. 140).

metaphysice repugnat, ut voluntas actum non eliciat. Nihilominus, juxta hos auctores, Deus voluntatem determinat, non quocumque modo, sed modo naturæ humanæ accommodato, *i.e.*, ut *libere* agat.[1]

341. Prob. Thesis. Arg. – 1°. *Requiritur indifferentia objectiva,* quia, ut voluntas dicatur libera, necesse est, ut objectum eam non necessitet ; *atqui* si objectum non proponatur ut indifferens *(i.e.,* habens rationem tum boni tum mali), aut proponitur ut simpliciter malum, et sic ab eo voluntas necessario se retrahit, aut proponitur ut simpliciter bonum nihil mali importans, et sic ad illud volendum necessario trahitur. — *Non sufficit,* quia libertas est formaliter proprietas voluntatis ; indifferentia autem objectiva pertinet ad intellectum judicantem, et est tantum libertatis radix (n. 325).

2°. *Indifferentia subjectiva, non passiva, sed activa requiritur.* Etenim *(a)* libertas est voluntatis *proprietas ; atqui* indifferentia passiva non est voluntatis *propria,* sed communis est omnibus facultatibus et rebus finitis, ut videre licet in intellectu et sensu respectu actus cognitionis, in appetitu brutorum, ac generatim in omni causa efficienti, quando deest aliqua necessaria conditio operationis. *(b)* Actio ad quam mea voluntas se non determinat active, sed ad modum passionis determinatur ab alio, non est profecto in mea potestate, quum revera non agam, sed actionem alterius patiar. Nisi igitur datur indifferentia activa voluntatis, tollitur verus libertatis conceptus.

3°. *Requiritur indifferentia activa positiva.* Ex dictis

[1] «Qui prædeterminationem physicam defendunt, ponunt: *(a)* eam essentialiter et metaphysica necessitate requiri ; *(b)* eam esse semper ad actum singularem et individuum, et essentialiter ex natura sua cum effectu, ad quem moveat, connexam, ita ut Deus in illa infallibiliter omnes actiones actionumque modos, ad quos movet, cognoscat ; *(c)* eam, ut habeatur, a voluntate creata non pendere ; *(d)* eam tamen optime cum libertate voluntatis creatæ componi posse ideo, quod, quamvis voluntatem ad actum singularem prædeterminet, eam tamen ita prædeterminat, ut ipsa sese cum libertate determinet. At nos quidem contra dicimus, posita ista prædeterminatione physica, jam veræ libertati creaturæ nullum locum esse » — (**Pesch**, *Psych.*, v. iii., p. 360).

sequitur requiri indifferentiam activam. Jamvero, hæc indifferentia activa nequit esse *negativa,* seu, salva veræ libertatis notione, admitti nequit præmotio divina voluntatem ad actum prædeterminans. Et revera 1°. ad rationem libertatis requiritur, ut voluntas, antequam actu suum actum elicit, sit indifferens erga objectum, et penes se habeat illud accipere vel rejicere; secus voluntas non haberet sui actus dominium, seu, libera non esset. *Atqui* admissa prædeterminatione physica (quæ, juxta ejus assertores præit, saltem natura, voluntatis actionem), voluntas, antequam elicit actum, determinatur ad actum particularem eliciendum, nec in sua potestate est hunc actum omittere nec alium elicere. 2°. Tunc solum voluntas intelligitur libere agere, quando *expeditam habens potestatem non agendi,* actum ponit, seu, quando, positis omnibus ad agendum prærequisitis, in ea existit *simultanea potestas agendi et non agendi. Atqui* si voluntas, ut agat, indiget prædeterminatione a Deo impertita, numquam agit cum expedita potestate non agendi; numquam ab agendo abstinet cum expedita potestate agendi, seu, numquam in ea existit simultanea potestas agendi et non agendi. Enimvero, aut voluntas absolute impeditur ab agendo ob defectum prædeterminationis, aut absolute movetur ad agendum ob prædeterminationis præsentiam. Aliis verbis; antequam voluntas instruitur omnibus prærequisitis ad agendum adest potentia non agendi, deest potentia agendi (deest enim aliqua conditio requisita); simul atque autem voluntas instruitur omnibus prærequisitis, adest potentia agendi, deest vero potentia non agendi (tollitur enim influxu prædeterminationis, quæ requisita supponitur); numquam igitur habetur simultanea potestas agendi et non agendi, ita ut cum omnibus ad actum prærequisitis voluntas possit carentiam actus conjungere. *Ergo* ratio libertatis postulat, ut voluntas non determinetur ab alio sed a seipsa, et plene expedita ad agendum penes se habeat tum actum tum actus omissionem. Jamvero, in hac expedita potentia ad agendum et non agendum, quam voluntas habet, etiam quum adsunt

omnia prærequisita, consistit indifferentia activa *positiva;* quæ proinde requiritur et sufficit ad libertatis exercitium.

342. Cor. 1. — Ergo « in solis intellectum habentibus liberum arbitrium invenitur, *non autem in illis, quorum actiones non determinantur ab ipsis agentibus, sed a quibusdam aliis causis prioribus*... Potentia voluntatis, quantum in se est, indifferens est ad plura, sed quod determinate exeat in hunc actum, vel in illum, *non est ab alio determinante, sed ab ipsa voluntate.* Sed in naturalibus, actus progreditur ab agente, *sed tamen determinatio ad hunc actum non est ab agente, sed ab eo qui agenti talem naturam dedit,* per quam ad hunc actum determinatum est. Et ideo propriissime actus voluntatis a voluntate esse dicitur; unde si aliquis defectus sit in actu ejus, ipsi voluntati in culpam et peccatum imputatur » (S. Th., In 1. *Dist.* 25, a. 1. et *Dist.* 39, q. 1, a. 1).

343. Cor. 2. — Ergo indifferentia ad bene vel male moraliter agendum non est de essentia libertatis; ad exercitium enim libertatis sufficit potentia eligendi inter actus boni positionem et omissionem vel inter plures actus bonos. Immo, quod voluntas possit esse indifferens quoad bonum et malum morale, magnam hujus facultatis indicat imperfectionem. Indicat enim voluntatem posse bonum apparens præ bono reali eligere eique adhærere, et proinde a fine ultimo hominis deviare. Præterea, quum voluntas non amplectatur malum, nisi hoc sub specie boni appareat, talis indifferentia præsupponit imperfectionem cognitionis in volente. Denique, eo quispiam est liberior, quo magis abhorret a malo morali. Quod nisi verum esset, Deus, qui eadem, qua existit, necessitate a malo retrahitur, perfecta libertate careret, seu infinite perfectus non esset. Unde, «magna libertas est posse non peccare, maxima non posse peccare » *(S. Aug.).*[1]

[1] As the possibility of error, and actual error, are defects of the mind and attest its imperfection, so the pursuit of what has a false appearance of good, though a proof of our freedom, just as disease is a proof of our vitality, implies defect in human liberty. The will also, simply because of its dependence on reason, no

344. **Obj. 1.** — Argumenta supra allata involvunt sophisma elenchi. « Supponitur enim quod idem modus agendi conveniat Deo, qui convenit creaturæ et eadem est ratio causalitatis divinæ et causalitatis creatæ. Quod est falsissimum, et ab adversariis ipsis rejicitur. Atqui si diversus modus agendi convenit Deo et creaturis, et diversa ratio causalitatis est in uno et aliis, nonnisi per sophisma concludi potest, quod causalitas divina physice præmovens seu prædeterminans voluntates creatas auferat ipsis indifferentiam et libertatem, ex eo quod causalitas creata, si valeret voluntates creatas physice præmovere seu prædeterminare, ipsis auferret indifferentiam et libertatem » — (**Zigliara**, v. ii., p. 521).

Resp. 1. — Si fundamentum, quo innititur objectio, verum esset, rueret omnis nostra de Deo cognitio ; semper enim aliquis objicere posset : Quod dicis verum est respectu creati agentis, haud vero respectu Dei. *V.g.*, dicenti omnem effectum debere finitum esse, responderi posset : quum ratio causalitatis diversa sit in Deo et creatura, nonnisi per sophisma dici potest effectus a Deo productos esse finitos eo, quod creatæ non possunt infinitos effectus producere.

Resp. 2. — Qui prædeterminationem physicam rejiciunt, non argumentantur ex notione causalitatis, quasi hæc notio esset univoca respectu Dei et creaturæ, sed ex notione causalitatis Deo et creaturæ vere communi, etsi analogice *(Ont.*, n. 273), et dicunt ipsam notionem libertatis (quæ postulat in facultate potentiam expeditam agendi et non agendi) pugnare cum notione prædeterminationis physicæ, qua facultas, data hac prædeterminatione, *insuperabiliter determinatur ad unum.* « Actio Dei (inquit *Gonet)* voluntatem, *priusquam* se determinet, ita ad actum movet *insuperabili virtute,* ut voluntas nequeat omissionem sui actus cum præmotione conjungere ». Jamvero, actus prædeterminatus est ille,

sooner desires anything contrary thereto, than it abuses its freedom of choice and corrupts its very essence. Thus it is that the infinitely perfect God, although supremely free, because of the supremacy of His intellect, and of His essential goodness, nevertheless cannot choose evil ; neither can the angels and saints who enjoy the beatific vision . . . This subject is often discussed by the Angelic Doctor in his demonstration that the possibility of sinning is not freedom, but slavery . . . « Everything », he says, « is that which belongs to it naturally. When, therefore, it acts through a power outside itself, it does not act of itself, but through another, that is, as a slave. But man is by nature rational. When, therefore, he acts according to reason, he acts of himself, and according to his free will ; and this is liberty. Whereas when he sins he acts in opposition to reason, is moved by another, and is the victim of foreign misapprehension. Therefore, *whosoever committeth sin is the slave of sin* » — (**Leo XIII.**, *The Great Encycl.*, Libertas).

qui, spectato ejus principio externo, non potest non esse; actus vero liber est ille, qui, spectato ejus principio externo, potest non esse; ergo, nisi idem simul affirmetur et negetur, actus liber non potest esse prædeterminatus.

Inst. — Deus omnia præmovet secundum eorum conditionem; *ergo* ita præmovet voluntatem, ut hæc libera maneat.

Resp. 1. — Ergo ita movet voluntatem, ut penes eam perfecte maneat actus positio et omissio, et eam non ita movet, ut impulsu prædeterminanti indeclinabiliter exeat in unum actum determinatum. « Deus voluntatem movet secundum ejus conditionem, non ut ex necessitate, sed ut *indeterminate* se habentem ad plura » **(S. Th., *Q. Disp.* II., q. 6, a. 1).**

Resp. 2°. — In hac instantia, ex una parte supponitur actus physice et antecedenter ad libertatis exercitium ita prædeterminatus, ut ex indole hujus prædeterminationis *insuperabiliter* et *infallibiliter* sequatur, et omitti nequeat: ex altera vero parte supponitur actus, cujus voluntas est domina, quemque pro lubitu ponere vel non ponere valet. Hæc autem duplex positio est manifeste contradictoria, quam proinde ne divina quidem causalitas efficere potest. Neve dicas cum quibusdam oportere nos hanc duplicem positionem ut mysterium credere, « sicut credimus mysterium Trinitatis, etiamsi non intelligimus » *(Bannez)*, et « captivandum esse intellectum in obsequium Fidei » *(Alvarez)*; nam jure quæri potest, utrum hic nobis offeratur mysterium divinitus revelatum, an contradictio humanitus elaborata, utrum in casu captivatio intellectus esset « obsequium *rationabile* » (Rom., c. 12) an cæcum.

Obj. 2. — Voluntas *in sensu composito*, i.e., sub prædeterminatione, necessario agit, minime vero *in sensu diviso*, i.e., abstracta prædeterminatione; *atqui* ad libertatem sufficit, ut voluntas possit actum omittere *in sensu diviso*, non requiritur, ut *in sensu composito* illum omittere valeat. « Et revera, quum volumus *(v.g.*, sedere), infallibiliter et necessario volumus *in sensu composito*: non enim est in libertate nostra *non velle* et *velle* simul. Attamen licet nostrum *velle* non possit simul componi cum *non velle*, est tamen in nostra potestate ponere potius *velle* quam *non velle*; quocirca *in sensu diviso velle* et *non velle* in nostra potestate sunt » — **(Zigliara).**

Resp. 1° *retorquendo*. — Voluntas *in sensu diviso* non *libere* sed prorsus *necessario* omittit actum: ergo in neutro sensu gaudet libertate, quum in hac sententia plane repugnet, ut voluntas quidquam agat absque prædeterminatione. Jamvero, libertas ad actum omittendum non consistit *in impotentia agendi* sed *in potentia non agendi*. Unde *in sensu diviso* tantum abest, ut actus voluntatis sit liber, ut sit prorsus impossibilis.

Resp. 2°. — Nisi voluntas potest in sensu composito cum prædе-

terminatione physica actum suum omittere, nullo jure libera dici potest, quia prædeterminatio voluntatis ad unum præcedit « *natura et causalitate* » ipsum actum voluntatis, et proinde voluntas in ipso *fieri* sui actus prædeterminatur, nec penes se habet actum omittere. Profecto, nemo diceret beatos in cælo esse liberos, quia licet in sensu composito (i.e., data visione) Deum necessario ament, tamen in sensu diviso (i.e., ablata visione) ab illo amore cessare possent.

Resp. 3°. — Sophistice provocatur ad necessitatem, quam habemus volendi dum volumus: nulla enim paritas existit inter hanc necessitatem et illam, quam prædeterminatio physica induceret. Nam *(a)* necessitas volendi (sedere) *in sensu composito* est necessitas *sequens* ipsum actum liberum, necessitas volendi sub prædeterminatione est necessitas *præcedens* et ineluctabiliter causans actum voluntatis. *(b)* Prior necessitas importat impossibilitatem componendi *velle* sedere cum *non velle*, posterior est impossibilitas componendi *non velle* sedere cum *prædeterminatione*. *(c)* Prior necessitas stat cum *expedita* potentia non volendi (sedere), posterior excludit *expeditam potentiam* non volendi, quum voluntas non habeat vim abjiciendi prædeterminationem. *(d)* Ergo prior necessitas genuino libertatis conceptui nihil repugnans habet, posterior hunc conceptum contradictorium reddit, affirmando et negando actum liberum esse in potestate voluntatis.

SECTIO ALTERA.

De Animæ Rationalis Natura, Relatione ad Corpus, et Origine.

CAPUT PRIMUM.

De Animæ Rationalis Natura.

345. De existentia *animæ* in homine constat ex *Parte* 1ª Psychologiæ. Hanc animam esse a materia distinctam constat, tum quia operationes vitales ordinis vegetativi et sensitivi exigunt principium materiæ viribus altius (n. 171), tum quia operationes intellectuales peraguntur cum intrinseca a materia independentia (n. 266).

Nec ambigere quis potest eam esse substantiam. Quum enim operationes intellectuales, utpote accidentia, postulent subjectum, dicendum est (ne in infinitum regrediamur) earum principium esse *ens in se subsistens* (i.e., substantiam).

Nec potest personalis uniuscujusque identitas per totam transactam vitam explicari, nisi in nobis existat aliquid permanens et a corpore distinctum, et proinde substantiale: aliquid *(a) permanens* et. . . *distinctum,* quia ex una parte, corpus pedetentim mutatur et identidem ex toto renovatur (p. 244); ex altera parte, opus est principio, quod activitates præteritas retineat, revocet, et recognoscat, nisi dicatur novas semper succedentes in corpore partes activitates præteritas cognoscere sibique appropriare; *(b) substantiale,* quia quum accidens non possit esse sine subjecto, hoc principium nequit non esse substantia.[1]

His præsuppositis, ad animæ rationalis naturam intimius perscrutandam transimus, et primo quidem agemus *de ejus simplicitate,* deinde *de ejus spiritualitate,* demum *de ejus immortalitate,* quæ, ut *proprium,* spiritualitatem sequitur.

ART. I.

DE ANIMÆ RATIONALIS SIMPLICITATE.

346. THESIS XXXIV. — Anima rationalis est substantia integraliter simplex.

Stat. Quæst. — Simplex dicitur illud, quod immune est a compositione. Non agitur hic de immunitate, quæ provenit ex exiguitate realitatis, ut accidit in puncto mathematico et in *nunc* temporis; sed de immunitate, quæ nobi-

[1] Personal identity can be explained only if besides the ever-changing body there is within us a substantial being distinct from the body, which really is the last source and centre of all our internal experiences. . . For how can we explain the perception of personal identity, if there is really nothing within us but ever-changing matter? My brain of to-day is not identical with my brain of seven years ago; in fact it is not perfectly identical with my brain of yesterday. . . If, then, there is nothing but matter within us, and if thinking is but a *« mode of motion »*, a peculiar vibration of some molecules of the grey matter of the brain, how can I possibly perceive the *identity of my thinking ego?* That is not only impossible but positively self-contradictory: for it means that I am somebody else of seven years ago — (Gruender, *Psychology without a Soul,* pp. 118 et 126).

liorem modum essendi alicujus entis comitatur. Quo major est hujusmodi immunitas a compositione, eo simplicior et perfectior est rei entitas. Unde, distingui solet: *(a) ens metaphysice simplex,* quod scilicet immune est ab omni compositione et compositionis possibilitate; talis est Deus solus; *(b) ens physice simplex,* quod quidem aliquam compositionem admittit *(v.g.,* ex substantia et accidente), non vero compositionem ex materia et forma resultantem.

Entium physice simplicium communiter distinguitur duplex species. Alia enim hujusmodi excludunt partes constitutivas seu essentiales, non vero partes extensivas seu integrales, *i.e.,* partes extra partes positas. Talem esse simplicitatem formarum inferiorum est communissima opinio scholasticorum (n. 177). Alia entia simplicia tam partes essentiales quam partes integrales excludunt. Animam humanam hac simplicitate gaudere thesis affirmat.[1]

Hic oportet monere animam humanam, qua *rationalem,* identicam esse cum anima humana, qua *sensitiva* et *vegetativa.* Quare, si probatur animam, qua *rationalem,* esse simplicem, exclusæ manent omnes objectiones contra thesim haustæ ex integrali compositione animarum inferiorum.

Minime oportet, ut explicite probetur animam rationalem esse essentialiter simplicem, tum quia omnis forma hanc sibi simplicitatem vindicat, secus haberetur forma formæ, tum quia anima rationalis non habet partes integrales, quæ quidem deesse non possent a substantia essentialiter composita.[2]

[1] Non negamus inesse animæ partes *potentiales* (i.e., facultates) eamque esse totum *potestativum* (cf. *Log.,* n. 48).

[2] « Non defuerunt antiqui scholastici tenentes animam componi ex materia et forma: 'cujus quidem positionis primus auctor fuit Avicebron' (S. Th., *De an.);* multi ante S. Thomam secuti sunt Avicebron in hac quæstione: ita Gulielmus de Alvernia, Alex. Halensis, ipse S. Bonaventura. Ad hanc opinionem accedunt spiritistæ hodierni tenentes animam separatam uniri cuidam materiæ, quam dicunt *le perisprit, le corps astral* » — (De La Vaissière, *Phil. Nat.,* v. ii., p. 165).

347. **Prob. Thesis. Arg. I.** — Anima rationalis est primum principium vitæ intellectivæ; *atqui* tale principium nequit esse compositum; *ergo*.

Prob. min. Hoc principium ope intellectus format ideas, judicat, ratiocinatur; *atqui (a)* ideæ *simplices* requirunt subjectum pariter simplex in quo inhæreant; ideæ *compositæ* (i.e., quæ pluribus notis constant) in diversis subjecti partibus distributæ existere nequeunt; sic enim ipse conceptus ideæ compositæ evanesceret. *(b)* Actus judicii et ratiocinii in subjecto extenso locum habere nequeunt. Uterque enim actus consistit in comparatione, quam mens efficit inter duas ideas objectivas, et in assensu in cognitam earum identitatem vel diversitatem (*Log.*, n. 59); *atqui* ut fiat comparatio, res comparatæ recipi debent in subjecto omnino eodem; assensus autem est actus simplicissimus, qui proinde in partes subjecti distribui nequit.[1]

348. *Dices:* Actus judicii et ratiocinii dari possunt in subjecto constanti duabus (vel pluribus) partibus *inextensis*.

Resp. In tali supposito actus esset vel partim in singulis partibus, vel integre in singulis, vel integre in una

[1] Kant holds that «the unity of thought consisting of many representations is collective», and, therefore, «it would be impossible to etablish the necessity of the presupposition of a simple substance». But this principle is false. The unity of thought is not the result of many representations. We have such mental acts as simple apprehension; we have ideas of simple things, *ex. gr.*, of being. Again in the act of judgment the mind compares two ideas. There is diversity, *i.e.*, the two ideas; but at the bottom of the diversity there is unity, *i.e.*, the relation between the ideas. Hence the act perceiving the relation is one. The same is also true of reasoning. The essence of reasoning is the perception of the relation between judgments. But the act grasping this relation is one and indivisible. Thus thought is not a collection of representations, but a simple indivisible unity perceiving and expressing the relation between the representations, e.g., the thought in which I know the judgment, John is good, is not expressed by the sùm of the concepts John and good: it is a something distinct from both, yet expressing the relation existing between both, a something which contains a comparison between diverse things, and yet unites their diversity in the unity of relation — (**Driscoll**, *The Soul*, p. 78).

parte, minime in reliquis. Jamvero, *primum* membrum est absurdum, quum actus intellectionis, utpote simplex, sit indivisibilis; *alterum*, contra testimonium conscientiæ, fingit plura intellectionis principia ac plures in nobis simultaneas cogitationes de eodem objecto formali. Quod ad *tertium* attinet, vel hæc pars et ipsa habet partes, et tunc redit quæstio tota, vel datur principium *integraliter* simplex, ex quo procedit et in quo recipitur operatio intellectiva.[1]

349. II. Anima nostra tota in se redit reflexione psychologica (v. i., n. 18), ita ut totum principium cogitans fiat objectum cogitatum; *atqui* animæ partibus integralibus constanti talis reflexio esset prorsus impossibilis, quia si partes essent inextensæ, ad summum quæque posset suos proprios actus cognoscere, quum quæstio versetur circa actus immanentes; si partes essent extensæ,

[1] Looking only at the nature of the internal phenomena, it may be demonstrated that the subject of them is a simple substance. If it were not so, the thinking substance would be composed of various substances; let us see what would follow from this supposition. Let the component substances be three, for example, A, B, C; I say this collection cannot think. Let us take this judgment: ***metal is a body,*** and let us see if it is possible for the collection of A, B, C, to form the judgment. Let us suppose the representation of the subject, ***metal,*** to be in the substance A; the idea of the predicate, ***body,*** to be in B; and the copula, ***is,*** to be in C; can a judgment be the result? By no means. A will perceive the metal, B the body, and C the copula, ***is.*** Each of these substances will have consciousness of its own; but as it is not conscious of the other two, it can form no judgment, for this essentially consists in the relation of the predicate to the subject. If you say that each of the substances contains the representation of the three things, we shall have three things, we shall have three judgments, and there will not be one thinking being, but three. Besides, either one of the three substances A, B, C, is composed of others or it is not. If it is not, it is simple, and we shall have a simple and perceptive substance: why then suppose three when one is enough? If it is composed of others, the difficulty is increased; for supposing A to be formed of two substances, which we may call ***m, n,*** the representation of metal will be distributed between ***m*** and ***n,*** in which case, far from obtaining a judgment, we shall not even have a subject; for it would not be possible to form the representation of metal, supposing it to be divided between ***m*** and ***n*** — **(Balmes,** ***op. cit.,*** v. ii., p. 378).

posset haberi reflexio unius partis in aliam, non autem reflexio totius animæ in seipsam, nec proinde cognitio totius animæ.[1] « Sic. *e.g.*, cum chartæ folium plicatur, numquam eadem pars in seipsam redit, sed altera flectitur supra alteram. Atque ita quidem, ut dum id fit, prior chartæ conformatio et figura prorsus amittatur, novaque exurgat partium dispositio. Quare, si folium illud conscientia frueretur, dum reflexionem perageret, numquam priorem suam modificationem attingeret, sed novam indueret; quam, ut deinceps per reflexionem perciperet, ob eamdem rationem exueret, atque ideo numquam ad exitum deveniret. At, ut quisque sibi est conscius, integer animus in seipsum redit suasque omnes modificationes reflexione perlustrat. Quæ quidem modificationes, dum actus reflexionis exseritur, non modo non evanescunt, sed etiam vividiores constantioresque efficiuntur. Ergo non extensus sed simplex est animus » (**Liberatore**, *Psych.*, p. 278).

350. Obj. 1. — Quod per partes corporis diffunditur, est et ipsum extensum; *atqui* anima rationalis per totum corpus diffunditur; *ergo*.

Resp. — *Dist. maj.* Quod diffunditur *definitive*, ita ut totum sit in singulis partibus, *neg.* (n. 76); quod ita diffunditur, ut habeat partes partibus corporis respondentes, *trans.* vel *conc. Contradist.* min. Anima rationalis diffunditur *definitive*. *conc.*; *quantitative neg*.

Obj. 2. — Id, quod habet potentias extensas debet esse extensum; *atqui* potentiæ sensitivæ et vegetativæ animæ rationalis sunt extensæ; *ergo*.

Resp. — *Dist. maj.* Id, quod *ut subjectum* habet potentias extensas, est extensum, *conc.*; id, quod tantum *ut radix* habet tales potentias, est extensum *neg. Contradist. min.* Anima rationalis est *radix*, unde derivantur prædictæ potentiæ, *conc.*; est *subjectum*, in quo inhærent, *neg*; hoc enim est compositum animatum (n. 218).

Obj. 3. — Per nutritionem novæ partes animatæ corporis humani formantur, per abscissionem partes prius animatæ depereunt;

[1] L'âme humaine connaît *ses* actes et *se* connaît *elle-même* par voie de réflexion proprement dite, *reditione completa*, comme disaient les scholastiques. . . Donc l'âme n'a pas d'étendue, n'est pas composée de parties quantitatives — (**Mercier**, *Psych.* v. ii., p. 260).

atqui hæc facta indicant animam simul cum corpore partes acquirere et amittere; *ergo.*

Resp. — *Conc. maj. Dist. min.* . . indicant animam rationalem acquirere ubicationes seu præsentias prius non habitas, et prius habitas amittere, *conc.;* indicant pluralitatem partium in anima, *neg.* Plures docent animas inferiores novas partes acquirere cum corporis nutritione. Anima autem rationalis, quia habet originem et naturam a materia independentem, non entitative sed præsentialiter crescit, dum corpus augetur. Quando membrum humani corporis amputatur, anima desinit illam partem animare, et proinde incipit minorem quam prius habere præsentiam, sed non minor esse. Hæc desitio non est intelligenda fieri per modum retractionis vel contractionis animæ ex parte abscissa, sed per modum, quo, fenestra velata, sol desinit cubiculum illuminare.

ART. II.

DE ANIMÆ RATIONALIS SPIRITUALITATE.

351. THESIS XXXV.—**Anima rationalis est substantia spiritualis.**

Stat. Quæst.—Spiritus *negative* describi potest ut substantia, quæ nec materia est nec in esse dependet a materia. In hac a materia independentia consistit rei spiritualitas; quæ tamen non debet intelligi ut mere negatio materiæ, sed vera perfectio, ratione cujus res constituitur a materia independens. Unde, **spiritus** *positive* definiri potest: *substantia simplex, quæ secundum suam essentiam quamlibet naturam materialem perfectione excedit.* Voces « secundum suam *essentiam* » innuunt ens spirituale etiam *in agendo* aliquo modo excedere materiam; modus enim agendi sequitur modum essendi. Voces « naturam *materialem* » complectuntur naturam vegetativam et sensitivam; hæ enim sunt materiales.

Ens spirituale aut tale est, ut nullum habeat ordinem ad unionem cum materia, — et dicitur *complete subsistens:* aut ex natura sua talem ordinem habet, — et dicitur *incomplete subsistens* (anima humana).

352. Prob. Thesis. Arg. I. — Substantia, cui competunt facultates spirituales, est et ipsa spiritualis; indoles enim facultatum indicat naturam principii, cui insunt. *Atqui*

animæ rationali competunt facultates spirituales (intellectus et voluntas), quorum spiritualitas jam supra est probata (n. 264 et 314).[1]

II.—Nulla facultas potest dominium exercere in subjectum, a quo intrinsece dependet, et cujus ope subsistit; ex toto enim subjicitur influxibus, qui tale subjectum afficiunt et movent. *Atqui* voluntas humana omnibus totius naturæ creatæ influxibus resistere potest, ita ut hi omnes simul nequeant eam necessitare ad volendum; libere enim rejicere potest bona, quæ vehementer alliciunt sensus et appetitum sensitivum, et eligere objecta, quæ sensus et appetitus abhorrent ac refugiunt, sicque sibi subditas tenet omnes passiones et sensuum affectiones. Atvero, hæc vis ac libertas voluntatis tam elevatæ supra omnes vires naturæ materialis ac omnes inclinationes et repugnantias sensitivæ naturæ hominis, non possunt oriri a principio materiali (facultas enim non potest esse perfectior suo principio), sed necessario postulant principium essentialiter distinctum a rebus corporeis eisque essentialiter perfectius, et proinde a materia in suo esse inde-

[1] The spirituality of the soul is proved from the nature of its faculties: the intelligence and the will. These faculties have for objects the universal and the necessary. It is to the universal as such, to nature conceived with an absolute — not an individual — character, that our intelligence tends. It studies the essence of the object, abstracting from the individual characteristics of « this » object. A peculiar aspect of the universal is its necessity. This necessity human intelligence does not fail to grasp. It directs its efforts to the immutable aspects of things, and abstracts from the contingent character they possess as individuals.

Our will likewise tends to the universal manifested in the form of the absolute good. No limited and relative good can satisfy it. It is in the union with an absolute perfection that our will would rest, that it would find its perfect happiness. Now, these characters of universality and necessity unequivocally separate our mental faculties from the pure forces of matter. Matter is essentially individual, and envelops in individual conditions all objects of which it is an essential constituent. Our mental faculties are thus independent of matter, and the soul, the substance they constitute, is necessarily endowed with the same independence — (Perrier, *Revival of Schol. Phil.*, p. 118).

pendens,—quod principium est anima rationalis. *Ergo* anima rationalis est substantia spiritualis.[1]

III.—Anima humana summopere delectatur rebus spiritualibus; quanto enim amore homines prosequuntur virtutem, felicitatem, Deum! immo, ut hæc bona securius et facilius attingant, quot ex illis dimiserunt bona sensibilia! quod et fecerunt nonnulli ethnici amore sapientiæ allecti. Jamvero, substantia materialis, utpote extensa, non potest affici rebus spiritualibus *(i.e.,* inextensis), nec proinde potest talibus delectari. Præterea, sua quisque ratione et mensura persentit suam animam rebus spiritualibus, quasi cibis maxime sibi accomodatis, pasci, nutriri, delectari.[2]

353. **Cor.**—Ergo notio spiritualitatis non est confundenda cum notione simplicitatis; spiritualitas enim importat independentiam a materia in essendo et per consequens in agendo; simplicitas ab hac independentia præ-

[1] Vegetative and sensitive functions, though superior to those of inorganic matter, are all governed by ***physical necessity***. . . Man, when exercising his power of free choice, is immune from such necessity. The free will of man is not subject to the law which holds sway over all material agents: the law of uniformity, or « invariable sequence », as it is sometimes called. There exists, then, a realm of nature distinct from and not less real than matter. The agent which is capable of free choice cannot be a material agent; it must be a simple being intrinsically independent of matter: it must be spiritual: and this spiritual being we call the soul — (**Gruender**, *Psych. without a Soul*, p. 210).

[2] A mere sentient agent — one whose whole being is immersed in material conditions — can only desire sensible goods. It can only seek what is proportioned to its nature, and this is always reducible to organic pleasure or avoidance of pain. On the other hand, to a spiritual creature which is endowed also with inferior faculties, both sensuous and suprasensuous good is adapted. Therefore, the aspirations of the latter are unlimited, while those of the former are confined within the sphere of material well-being. But our own consciousness, history, biography, and the existence of poetry and romance, all overwhelm us with evidence of the fact that man is moved by suprasensible good. Love of justice, truth, virtue, and right for its own sake, are motives and impulses which have inspired some of the greatest and noblest works chronicled in the narrative of the human race. Consequently, there must be in man a principle not completely subject to material conditions — (**Maher**, p. 473).

scindit, eam nec includens nec excludens. Porro, omne quod est spirituale est simplex; at non vice versa, quum omnes formæ, necnon vires materiales, sint plus minusve simplices, nec ideo dici possint spirituales.

354. Obj. 1. — Actus repugnantes nequeunt simul inesse eidem subjecto: *atqui* anima rationalis in suis operationibus sensitivis et vegetativis intrinsece pendet a materia; ***ergo*** repugnat, ut in suis operationibus intellectivis et in suo esse sit a materia independens.

Resp. — *Dist. maj.* . . nequeunt simul et sub eodem respectu inesse eidem subjecto, *conc.;* sub diverso respectu, *neg.; Conc. min. Dist. concl.* Repugnat, ut sit extrinsece independens a materia in suis operationibus intellectivis et in suo esse, *conc.;* ut sit intrinsece independens, *neg.* Nulla repugnantia habetur in eo, quod anima rationalis in quibusdam operationibus *intrinsece,* in quibusdam *extrinsece* tantum, dicatur a materia dependens; nam idem non affirmatur et negatur ***secundum idem.*** Et rem ita se habere facile patebit recordanti talem esse ordinem inter res naturales, ut superiores contineant perfectiones inferiorum, et quasdam alias; et proinde efficere possint quidquid fieret ab inferioribus, si adessent. Jamvero, anima rationalis, utpote continens perfectiones animarum inferiorum, per corpus et cum corpore exercet illas functiones, quæ per corpus et cum corpore exerceri possunt *(scil.,* operationes sensitivæ et vegetativæ); eas tamen non exercet, ***prout est rationalis,*** sed quatenus ***virtualiter*** est sensitiva et vegetativa. In his itaque operationibus intrinsece pendet a materia, minime vero in operationibus intellectivis, quæ sunt ipsi propriæ, prout est rationalis. Unde etiam in suo esse a materia est independens.[1]

[1] We can conclude from a dependent activity to a dependent nature only in the event that there are none but dependent actions: but we cannot draw such a conclusion if, besides dependent, there are *at the same time* independent activities, because a higher (independent) being can, under circumstances, perform the same function as a lower (dependent) one; but not contrariwise. Consequently an independent being can perform dependent actions; a dependent being, however, is unfit for independent activity. . . The body is much more dependent on the soul than the soul on the body. The latter is rather the passive, the former the active, element, and hence it would be much more correct to say: The soul — of its own power — uses the organism for the performance of vegetative and sensitive functions, thus raising it to a higher plane of action. Though this relation does not necessarily presuppose an independent being, at all events it does not contradict it. Surely no one would say that the lower, dependent, vital func-

Inst. — *Atqui* anima humana intrinsece pendet a materia in operationibus sibi propriis, secus enim nulla ratio sufficiens assignari potest, cur evolutio et exercitium facultatum mentalium adeo pendeant a corporis conditionibus, ut videri potest in pueris, in ægrotis, in insanis, etc.

Resp. — Ratio sufficiens et vera hujus dependentiæ habetur in doctrina scholastica circa substantialem animæ et corporis unionem, ex qua sequitur nullam actionem esse exclusive unius vel alterius, sed utriusque, juxta illud : *actiones sunt suppositi*. Unde intelligitur evolutionem et exercitium mentalium facultatum postulare, tamquam conditiones necessarias, quasdam corporis operationes et dispositiones, quibus vitiatis vel sublatis, vitiatur vel tollitur congrua facultatum activitas. Quare, facta, quæ objiciuntur, optime probant animam rationalem in statu unionis extrinsece pendere a corporis, et præcipue cerebri, dispositionibus, illogice vero afferuntur ad ejus intrinsecam dependentiam stabiliendam.[1]

Obj. 2. — Anima rationalis recipitur in corpore ut ejus forma substantialis ; *atqui* « quidquid recipitur, ad modum recipientis recipitur » ; *ergo* anima recipitur materialiter in corpore, seu, non est spiritualis.

Resp. — *Dist. maj.* Anima recipitur in corpore ob *essentialem* animæ indigentiam, quatenus absque unione cum corpore existere nequit, *neg.* ; . . . ob indigentiam *naturalem,* quæ ei competit, quatenus est substantia incompleta et pars constitutiva et specificativa alicujus *totius, conc.* Pariter *dist. min.* Quidquid recipitur, secundum capacitatem *recipientis* recipitur, *conc.* ; secundum totam *suipsius* capacitatem, *subdist.* ; si *entitative* non supereminet recipiens, *trans.* ; si illud supereminet, *neg.* Anima rationalis est in sua substantia forma corporis, non secus ac formæ inferiores ; atvero, secus ac illæ, habet operationes capacitatem principii mate-

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tions rob the soul of its independence ; a quality which its higher life categorically demands — (**Fell,** *Immortality of the Soul*, p. 50).

[1] A diseased brain will interfere with the harmony of thought, in the case of the soul, for the simple reason that the soul is obliged, in this life, to use that instrument, very much as a rickety and unsound organ will interfere with the harmony of sound, in the case of the organist, for the simple reason that he has to play on it. If you argue that, because a diseased brain interferes with the clearness of thought, therefore thought is in the brain, in such a sense that no spiritual and thinking agent *distinct from the brain* is necessary ; then, to be logical, you must also argue, that, because an injured harmonium interferes with the accurate rendering of the sonata, therefore the power of musical conception, composition, and execution is in the instrument, and that no intelligent and musical mind, *distinct from the harmonium*, is necessary — (**Vaughan,** *Life after Death*, p. 213).

rialis transcendentes, quæque igitur requirunt principium spirituale.[1]

Obj. 3. — Substantia spiritualis debet habere vim superandi quamlibet vim materiæ: *atqui* tota vis, quam exserere possumus, sæpissime superatur vi materiali; *ergo*.

Resp. — *Dist. maj.* Substantia spiritualis non informans debet talem vim habere, *trans.*; . . . actu informans, *neg.*; Pariter *dist. min.*; . . . superatur, quia anima est materialis, *neg.*; quia anima in sua vi locomotiva et resistiva dependet a dispositione musculari corporis, cujus est forma, *conc.* Anima movet corpus, cui unitur, mediantibus musculis, quæ, quum corpora sint, possunt superari vi motrice et resistiva aliorum corporum.

In distinguendo *maj.*, diximus *transeat*, quia, utrum anima separata habeat vim movendi corpora eisque resistendi, non conveniunt doctores. Plures cum *S. Thoma* et *Suarez* negant, plures alii cum *Scoto* affirmant. « Neutra sententia innititur apodicticis argumentis, neutra impugnatur rationibus ita validis, quæ nequeant commode dissolvi » — (**Urráburu**, *Psych.*, v. iii., p. 1304).

ART. III.

DE ANIMÆ RATIONALIS IMMORTALITATE.

355. **THESIS XXXVI.**—**Anima rationalis intrinseca et extrinseca immortalitate donatur.**

Stat. Quæst. — Immortale dicitur, quod est a morte immune. Mors est desitio vitæ. Unde, **immortalitas** definitur: *proprietas, vi cujus ens vivens fit a morte immune*. Non est igitur idem ac *incorruptibilitas*, quæ vel materiæ primæ convenit (n. 115); nec idem est ac simplex perpetuitas *existentiæ*; hæc enim non viventi convenire potest (n. 53), sed est perpetuitas *vitæ*. Hæ tres tamen, quando agitur de anima, indiscriminatim sumuntur. Quæritur itaque, utrum anima rationalis, dissoluto corpore, in per-

[1] The soul is the form of the body, but not totally comprehended by the body as to its perfection and virtue. It gives being to the body, but according to the capacity of the same, which capacity does not extend beyond vegetative and sensitive degrees. These two degrees, then, so far as the being of the essence is concerned, it imparts to the body, by reason of virtually containing the inferior forms. But as being intellectual it exceeds the potentiality of the body, and remains alone the subject of the potentia that results from it. — (**Liberatore**, *On Universals*, p. 114).

petuum vivat seu immanenter agat, an aliquando, sive ex causis intrinsecis sive ex causis extrinsecis, vitam amittat.

Triplex hic distinguenda est immortalitas; *(a) absoluta,* quæ convenit Deo soli, qui vi essentiæ suæ *est* et *vivit; (b) naturalis,* quæ convenit substantiis spiritualibus creatis, quæ, posita earum existentia, naturaliter postulant perpetuitatem vitæ, quia nimirum ex intrinseca natura sua sunt a corruptione immunes; *(c) gratuita* seu *supernaturalis,* quæ speciali Dei beneficio confertur rei naturæ sua mortali. Talis fuit immortalitas corporum protoparentum ante lapsum, et erit omnium hominum post resurrectionem.

356. Animæ humanæ immortalitatem negant omnes, qui circa ejus simplicitatem et spiritualitatem errant; necnon pantheistæ qui putant eam post mortem universali substantia reabsorberi sicque propria identitate spoliari. Kantius eam habuit ut postulatum rationis practicæ (v. i., n. 189, *ad fin.*). Nec defuerunt scholastici minus recte hac de re sentientes. Fuit *Scoti* opinio animæ immortalitatem nonnisi rationibus *probabilibus* philosophice suaderi posse, sed Fide certo tenendam esse.[1] *Cajetanus* « sui valde dissimilis scripsit se *credere quidem* animam rationalem esse incorruptibilem, *at nescire* tamen » (**Canus**, *De locis theol.,* lib. 12, c. 13, n. 2).[2] *Pomponatius* (ob. 1525) usque eo progressus est, ut diceret animam esse philosophice mortalem, theologice immortalem. Ecclesia hanc opinionem damnavit.[3]

[1] Juxta **Van de Woestyne**, « intentio Scoti non est ostendere quod non haberi possint rationes demonstrativæ », sed ostendere quod de facto ex aristotelicis demonstrativa argumenta non afferuntur ». *Minges* vero et *Klug,* quos citat, putant « Scotum, etsi rejiciat demonstrabilitatem *metaphysicam,* non rejicere *moralem* ». At « hujusmodi denominationes non videntur quadrare cum terminologia Subtilis » (v. ii., p. 594).

[2] On the question of the immortality of the soul, Cajetan differs from St. Thomas. He holds the theory of Averroës to be that really propounded by Aristotle, and doubts, for his own part, about the power of reason in formulating its proof of immortality — (**De Wulf-Coffey,** *Hist. of Medieval Phil.,* p. 490).

[3] In order to stop the mouths of Italian philosophers who contended that Aristotle denied the immortality of the soul, the Coun-

357. **Prob. Thesis.** PARS 1ª. *(. . . intrinsece immortalis)* **Arg. I.** –Anima humana intrinsece immortalis dicenda est, si perire nequit *(a)* aut corruptione per se, *(b)* aut corruptione per accidens, *(c)* aut amissione principii vitæ; alius enim modus, quo res ab intrinseco pereat, concipi nequit.

Jamvero, perire nequit *(a) corruptione per se,* i. e., partium dissolutione, quum sit omnino simplex, excludens omnem compositionem tum essentialem tum integralem (n. 346); *(b)* nec *corruptione per accidens,* i.e., destructione subjecti, cui inest (nempe corporis), quia, quum sit substantia spiritualis, in suo esse subsistit independenter a corpore; *(c)* nec *amissione* principii vitæ, quia, secus ac corpus, in vivendo non pendet ab alio principio sibi intrinseco, sed ex natura sua habet, ut sit sibi principium vitæ, – esse ejus est vita; tamdiu igitur vivere persistet, quamdiu persistit existere. *Ergo* nullo modo potest anima rationalis ab intrinseco desinere, et proinde immortalis dicenda est.

II.—Anima humana naturali desiderio fertur ad vitam perpetuam appetendam, id quod manifestum fit conscientiæ testimonio et totius generis humani consensu, ac rectæ rationi consonat; nam « desiderium in rebus cognoscentibus sequitur cognitionem. Sensus autem non cognoscit *esse nisi sub hic et nunc.* Sed intellectus apprehendit *esse absolute et secundum omne tempus.* Unde, omne habens intellectum naturaliter desiderat esse semper » (S. Th., 1, q. 75, a. 6). *Atqui* « naturale desiderium non potest esse inane » *(ib.),* sed eo, quod e fundo naturæ exo-

cil of Vienne [1311] made it an article of faith. No decision, however, was come to respecting Aristotle's attitude in the question. A similar opportunity presented itself to the Lateran Council in 1512, which, however, merely condemned certain philosophers who asserted that pure reason has no right to say that the thinking soul is not mortal. In the decisions against traditionalism, the knowledge of the soul's immortality was enumerated among those things that can be attained by natural reason. Lastly, the Vatican Council, by rejecting every form of monism, and by drawing a sharp distinction between matter and spirit, indirectly sanctions belief in the immortality of the soul — (**Schanz.** *A Christian Apology,* v. i., p. 306).

ritur, intimum rei characterem ac scopum ejus finalem revelat. *Ergo* naturale desiderium semper vivendi, quod experitur anima rationalis, eam ad semper vivendum esse ordinatam ostendit.[1]

358. III.—Anima rationalis habet naturalem aptitudinem ad semper vivendum, si habet omnia ad semper vivendum *(i.e.,* ad immanenter operandum) requisita; *atqui* hæc omnia anima certo habet. Nam, licet anima separata potentias sensitivas et vegetativas solum radicaliter retineat, tamen potentias intellectivas ad agendum expeditas adhuc possidet. Nec deest objectum proportionatum, siquidem: 1°. Quod attinet ad intellectum, ea omnia, quæ intelligibilia sunt et absque concursu phantasmatum percipi possunt, conveniens objectum intellectus separati constituunt. Et revera post mortem tribus modis naturaliter intelligit: « uno modo per species, quas recepit a

[1] Go where we will, and seek where we will, and as far back as we will, we invariably find that men have always and uniformly believed in a state of existence after death. This conviction is so strong and so universal that we can only conclude that it is ingrained in man's very nature. Though some few individuals may question it, though an isolated person here and there may court notoriety by denying it, the broad fact remains that the voice of mankind as a whole proclaims it, and has ever proclaimed it, in most unmistakable terms. Now, this cannot be the effect of any particular climate or surroundings, for it is the same all over the world. Nor can it be accounted for by training or education, since the unlearned and ignorant, no less than scientists and philosophers, are conscious of the same presentiment. It is independent of race and colour, of place and position, of language and tradition, of sex and age. Yea, savages, barbarians, and the lowest of the coloured races, have cherished the same conviction. Now, it stands to reason, that a belief so universal, so independent of position and education, so uninfluenced by differences of culture, antecedents, and habits of life and surroundings, must be a veritable instinct of nature, and *as such cannot mislead or prove false;* for the *Vox Populi* is the *Vox Dei*. . . It is true that this belief among savages is accompanied by much that is gross, false, and absurd: but nevertheless, the belief is there. . . Stripped of all these false accretions, the bare fact itself, *viz.,* that death is but a door to a new state of existence, is clearly found to be impressed on every human mind. Even the very pagans were wont to exclaim, « Non omnis moriar » — I shall not wholly die — (**Vaughan**, *op. cit.,* p. 67).

rebus dum erat in corpore ; alio modo per species in ipsa sua separatione a corpore sibi divinitus infusas ; tertio modo videndo substantias separatas et in eis species rerum intuendo. Sed hoc ultimum non subjacet ejus arbitrio, sed magis arbitrio substantiæ separatæ, quæ suam intelligentiam aperit loquendo, et claudit tacendo »[1] — (S. Th., *Q. Disp.*, XI. q. 19, a. 1).

2°. Posita intellectus cognitione, adest proprium voluntatis objectum ; quod enim intellectus cognoscit, id voluntas appetere potest.

359. Pars 2ª. *(. . . extrinsece immortalis).* **Prænotamen.** Anima, utpote simplex et spiritualis, sola annihilatione destrui potest ; annihilatio autem eo fit, quod rei existenti subtrahitur divina conservatio. Jamvero, quum nulla vis creata possit influxum Dei conservantem subtrahere vel impedire, nulla vis creata potest animam annihilare.

[1] We may safely state that each soul will, after death, know itself much more perfectly than it does now, and that in this knowledge of itself it will know God, not as the saints see Him who contemplate Him face to face, but as we see in a mirror the objects therein reflected. For the soul, with its intellectual power, will then be the spiritual mirror, reflecting in an imperfect way, it is true, but more perfectly than material creatures can do, God's infinite perfections : so that by seeing itself the soul will also see, in a natural way, God's perfections.

Now, what other objects besides itself and God will the disembodied soul know ? In the first place, it will have the recollection of things known during the present life. . . Of course the manner in which this knowledge is recollected by the mind after death is different from what it was during life. In the present life memory requires to be accompanied by sensible images : but, after death, those sensible images cease ; so that the knowledge acquired is, as it were, bound up together with the spiritual images supplied to the soul by God for its intelligence. But this special kind of knowledge, namely, the knowledge acquired in life, will vary greatly in different persons : so that it must be considered nil in children who die before having the use of reason. On the other hand it will be of very wide range in men whose lives have been spent in profound study. . .

Besides the knowledge acquired in life, we may say that the separated soul will also have a knowledge of those objects to which it is, in the new state, in some way determined, that is, by some affection or by some natural relationship – (Lépicier, *The Unseen World*, p. 123).

Certum est Deum negando conservationem animam in nihilum redigere posse, et ideo, licet metaphysice constet animam habere naturalem exigentiam semper vivendi, tamen ratio humana, semota revelatione supernaturali, non præbet certitudinem *metaphysicam,* sed tantum *physicam,* summi tamen gradus, de animæ perpetuitate. Non enim est philosophiæ inquirere quid Deus libere decreverit circa hanc vel illam animam, sed quid postulent divina attributa, quatenus hæc manifestantur in natura rationali. Hac manifestatione considerata, pro *physice certo* tenendum est numquam fore, ut Deus ullam animam in nihilum redigat.

360. Arg. I. — « Deus, qui est institutor naturæ, non subtrahit rebus, quod est proprium naturis earum » (S. Th., *C. Gent.,* lib. 2, c. 55); *atqui* anima rationalis est naturaliter immortalis (n. 357), et proinde secundum ordinem naturalem ei debetur perpetuus influxus conservativus. Nec ullum apparet motivum, cur Deus hunc concursum miraculose deneget; nam Deus in miraculis patrandis ad suæ gloriæ manifestationem operatur; ex animæ autem annihilatione non sequeretur divinæ gloriæ manifestatio, sed cessatio entis, quod conservatum in esse, vellet nolletve, hanc gloriam perpetuo procuraret.

361. II. — Si in vita futura Deus ullam animam annihilaret, hæc esset *(a)* aut beata in cælo, *(b)* aut beata inter parvulos absque baptismate decessos, *(c)* aut misera in inferno. *Atqui (a)* ratio veræ beatitudinis postulat perpetuitatem. Et revera, aut anima beata scit se aliquando desituram esse aut nescit. Si prius, eo ipso, et quidem ob contrarietatem inter hanc cognitionem et suum insitum et vehemens desiderium semper feliciter vivendi, omnis ejus felicitas evanesceret. Præteritam enim felicitatem pro nihilo reputamus, quia « non quærimus quid aliquando fuerimus, sed quid semper futuri simus » *(S. Hier.).* Si posterius (præterquam quod ignorantia circa rem, quam animæ maxime interest certo scire, est et ipsa malum perfectam intellectus felicitatem impediens), necesse est, ut sponte in anima oriatur dubium, an desi-

tura sit felicitas acquisita; quod dubium, non minus quam certa scientia, magnam ingereret animæ tristitiam. *Neve dicas* Deum posse ab anima ejus sortem celare. *Quia* hæc esset positiva deceptio Deo prorsus indigna et vitam sempiternam sperantibus injuriosa.

(b) De anima naturalem beatitudinem possidente, idem suo modo dicendum est.

(c) Quod attinet ad animam damnatam, « licet Deus de justitia creaturæ contra se peccanti posset *esse* subtrahere, et eam in nihilum redigere; tamen convenientior justitia est, ut eam in *esse* reservet ad pœnam. . . Quia ista justitia congruentius respondet culpæ in duobus. In uno quidem, quia in culpa voluntas contra Deum agit, non autem natura, quæ ordinem sibi a Deo inditum servat; et ideo talis debet esse pœna, quæ voluntatem affligat, naturæ nocendo, qua voluntas abutitur. Si autem creatura in nihilum redigeretur, esset tantum nocumentum naturæ, et non afflictio voluntatis. In altero vero, quia cum in peccato duo sint, *scil.*, aversio ab incommutabili bono et conversio ad bonum commutabile, conversio post se aversionem trahit; nullus enim peccans intendit a Deo averti, sed quærit frui temporali bono, cum quo simul Deo frui non potest. Unde, cum pœna damni aversioni culpæ respondeat, conversioni vero ejus pœna sensus pro actuali culpa, conveniens est, ut pœna damni non sit sine pœna sensus. Si autem in nihilum creatura redigeretur, esset quidem pœna damni æterna, sed non remaneret pœna sensus » (**S. Th.**, *Q. Disp.*, I., q. 5, a. 4, ad 6).

362. Schol. 1. — Status unionis magis congruit naturæ animæ quam status separationis; separata autem dici nequit anima in statu violento, quum naturale sit enti spirituali in se subsistere.[1] Itaque post mortem anima nullum habet exercitium suarum virium sensitivarum, nec facultatum intellectivarum exercitium plene connaturale.

[1] « Status unionis est naturalis quasi *per se primo*, separationis quasi *per se secundo* et ex consequenti » — (**Urraburu**, *Psych.*, v. iii., p. 1246).

« Ceteris paribus, perfectior est status animæ in corpore quam extra corpus, quia est pars totius compositi, et omnis pars integralis est respectu totius » (**S. Th.**, *Suppl.*, q. 75, a. 1, ad 4).

363. Schol. 2. Corporis resurrectio. — Fide constat personam humanam morte dissolutam integre reparatum iri in die illa, qua mortui de corruptione resurgent incorrupti; utrum vero resurrectio sit homini debita, controvertitur inter auctores. Juxta *Suarez (De An.,* lib. 6, c. 9), ad Deum ut auctorem naturæ pertinet reunire animam et corpus, tum quia congruit, ut aliqua sit retributio bonorum et malorum non solum in anima sed etiam in corpore; tum quia secus natura humana nequit perfectum statum naturalem habere, nec potest sine gratia totam suam perfectionem naturalem habere. Eamdem opinionem defendunt *Costa-Rossetti* (Phil. Mor., th. 15), et *Mercier*.[1]

Alii communissime, dum concedunt reunionem etiam in ordine naturali esse tum naturæ humanæ tum divinæ bonitati omnino consentaneam, et rationes adductas ad eam probandam ut naturæ humanæ debitam esse gravissimas, eam tamen ut simpliciter supra exigentiam naturæ existimant.

364. Obj. 1. — Quod est ex nihilo, habet potentiam ad non-esse; *atqui* anima rationalis est ex nihilo; *ergo* desinere potest.

Resp. — *Dist. maj.* . . habet potentiam *objectivam* ad non-esse, *conc.*; *subjectivam, subdist.*, si est physice compositum vel forma materialis, *conc.*, secus, *neg. Conc. min. Dist. concl.* in sensu majoris. Potentia objectiva, quæ omni enti finito tribuitur, quia et quatenus, desinente divina conservatione, ipsum in nihil desinit, non est aliquid in creatura, sed denominatio extrinseca desumpta a Dei omnipotentia. Nam « sicut posse creari dicitur aliquid, non per potentiam passivam, sed solum per potentiam activam creantis, . . . ita cum dicitur aliquid vertibile in nihil, non importatur in creatura potentia ad non esse, sed in creatore potentia ad hoc quod *esse* non influat » — (**S. Th.**, 1, q. 75, a. 6, ad 2).

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[1] Notre thèse s'inspire des enseignements de S. Thomas qui se prononce expressément, au nom de la raison, pour la résurrection des corps. Le saint Docteur ne dit pas expressément, il est vrai, si les arguments qu'il enumère sont, dans sa pensée, apodictiques ou seulement probables — (**Mercier**, *Psych.*, v. ii. n. 290).

Obj. 2. — Multa dantur desideria *(v.g.,* divitiarum, honorum, etc). quæ numquam explentur: *atqui* fieri potest, ut pari ratione desiderium immortalitatis frustretur; *ergo.*

Resp. — *Dist. maj.* Dantur desideria, nec necessaria nec primaria, quæ nunquam explentur, *conc.,* desiderium necessarium et radix ceterorum, *neg. Nego. min.* et *paritatem.* Divitiæ aliaque hujusmodi desiderantur, quatenus censentur esse media ad attingendam beatitudinem, cujus igitur desiderium (quod quidem necessario involvit desiderium immortalitatis) est radix, ex qua cetera desideria promanant. Unde, illa desiderantur libere et ut media, hæc necessario et ut finis desideratur; illa non requiruntur ad naturalem hominis perfectionem, hæc absolute requiritur; illa universalitate et immutabilitate carent, hæc utraque gaudet.

Obj. 3. — Si desiderium beatitudinis probat animæ immortalitatem, sequitur animas damnatas aliquando beatas evasuras esse: *atqui* hoc est falsum; *ergo.*

Resp. — *Dist. maj.* . . , sequitur has animas, si in hac vita media ad beatitudinem assequendam apta adhibuissent, evasuras esse beatas, *conc.* . . sequitur eas non potuisse esse beatas, *neg.* Desiderium beatitudinis non est confundendum cum beatitudinis adeptione: hæc enim, secus ac illud, ali quas præsupponit conditiones, quas, si homo, dum tempus est, nolit adimplere, in altera vita sequetur status miseriæ irreparabilis. Cessante enim conditione viæ, non restat nisi conditio termini; in termino autem res non tendunt sed quiescunt. Unde, appetitus beatitudinis præscindit ab actuali ejusdem consecutione, et proinde ex eo, quod hic appetitus frustratur in reprobis, non sequitur desiderium beatitudinis non esse argumentum pro animæ immortalitate.[1]

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[1] Aquinas. . . tells us that perfect happiness is attainable because we have by nature the capacity of perfect happiness, *i.e.,* we are able to desire it and *do* naturally desire it. His argument may be expanded thus — the desire for perfect happiness is not an accidental growth in man. It is a natural capacity, a natural desire. It must, therefore, be capable of fulfilment. Why? Because nature does not act in vain. When men set ends before themselves, these ends are not always possible of attainment. But nature cannot so fail. If the end or capacity of a tree be to bloom, then blooming is an attainable perfection — a something to which the tree, if properly nursed and properly directed, may come. Individual trees may, indeed, fail to bloom, for nature may be crossed in many ways, and so our present thesis is, not that every man *will* gain the end, but only that the end is attainable. Whether the individual trees attain their end depends altogether on the chances they get. But « to bloom » is an attainable end, and many trees will *de facto* succeed in reaching it. The reason is that with nature the end is first and before all, and the principle of all. To

Obj. 4. — Similis est origo hominis et bruti, similis etiam processus vitæ utriusque; *ergo* similis etiam utriusque finis. Quod S. Scriptura confirmat dicendo: « unus interitus est hominis et jumentorum, et æqua est utriusque conditio. . . Quis novit, si spiritus filiorum Adam ascendat sursum, et spiritus jumentorum descendat deorsum » (Eccles., c. 3).

Resp. — Quod dicitur de similitudine originis et processus vitæ et finis hominis et bruti, verum est relate ad corpus, falsum autem relate ad animam: et in hoc sensu intelligi potest prima pars textus e S. Scriptura citati.

Pars altera intelligi potest de incertitudine beatæ immortalitatis vel de defectu considerationis circa ultimum hominis finem. « Interrogatio *quis scit* (Vulg. *novit),* non est viri sceptici, de re proposita dubitantis vel eam negantis, sed viri admirantis et difficultatem exaggerantis: *quis novit* igitur idem est quod *quotusquisque novit* vel *pauci norunt*. . . Integri igitur loci sensus hic est: Quamvis hominibus et brutis, quod ad corpus attinet, idem est exitus, et quamvis illis, si sola externa apparentia attenditur, idem inesse videatur spiritus vitalis, maximum tamen inter eos intercedit discrimen, quod pro dolor! pauci tantum curant, non considerantes spiritum hominis post mortem sursum ad Deum ascendere ac proinde permanere, bruti vero animam una cum corpore in terram descendere et perire » (**Cornely**, *Introd. in Sacros Libros,* v. ii. 2, p. 179).

Juxta **Huarte** autem, his in locis non agitur directe de animæ immortalitate, sed de ejus post mortem destinatione. « Nimirum usque ad tempus, in quo liber Ecclesiastes conscriptus est, communis erat hebræorum existimatio animas humanas post mortem descendere in aliquem locum infernum, scil., in *Scheol.* Tempore autem auctoris libri Ecclesiastes opinio invalescere cœpit animas non in inferna descendere, sed potius ascendere in superna. Hinc ergo, hanc novam opinionem veluti nolens admittere, utpote doc-

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blossom and bear fruit — this is the first thing in nature's plan; and because that end is attainable, therefore is the tree provided with roots, bark, veins, arteries, capacities — with all, in fact, that it is and all that brings it to its natural perfection. It is so also with man. We have not directed ourselves to perfect happiness — to the attainment of the infinite good: nature has directed us to it and given us a capacity for it, just as nature has given to the tree the capacity to flower. The appetite for the infinite good belongs to our very essence, and there is no escaping from it. Perfect happiness, we conclude, is, therefore, attainable by man. If all the requisites of nature be fulfilled the tree will bloom. If all the requisites of human nature be fulfilled by us and all the natural laws observed, then will a man reach his final natural end. If not, he fails — (**Cronin**, *The Science of Ethics,* v. i., p. 84).

trinæ traditionali contrariam, ait Ecclesiastes: *Quis novit* etc. Non ergo ibidem dubitatio exprimitur de animæ immortalitate; sed contra, ea præsupposita, quæstio est de ejus destinatione post mortem » *(De Deo Creante,* p. 223). Quidquid sit, minime putandum est versus citatos quidquam contra animæ immortalitatem continere: nam alibi pluries in sacris libris *(v. g.,* in libro cit., c. 12) animæ immortalitas explicite docetur.

CAPUT SECUNDUM.

De Unione Animæ et Corporis.

365. Absoluta quæstione de natura animæ, proximum est, ut agamus de ejus unione cum corpore. Quæritur igitur cujusnam naturæ (substantialis, *scil.,* an accidentalis) sit hæc unio, et probato quod anima ita cum corpore uniatur, ut exinde una oriatur natura seu substantia, occurrit quærendum, *quomodo* fiat unio, num *per se* et *immediate,* an per aliquid intermedium. Has quæstiones alia de sede animæ in corpore naturaliter subsequitur. Unde totum caput in tres articulos dividitur.

ART. I.

DE TERMINO UNIONIS.

366. THESIS XXXVII. — **Anima rationalis ita cum corpore conjungitur, ut inde exsurgat una completa substantia, scil., homo.**

Stat. Quæst. — Unio definitur *compositio plurium in aliquod unum.* Hæc «compositio» intelligenda est *passive* (i.e., ut effectus alicujus agentis) non vero ut agentis actio.

Dicitur *(a) plurium* (i.e., rerum distinctarum), quippe quæ constituunt *materiam* unionis; *(b) in aliquod unum,* quia non inter res distinctas, qua distinctas, sed qua coniunctas, existit unio *formaliter* sumpta *(Ont.,* n. 282, 3°).

367. — Duplex dari potest species unionis inter substantias: *accidentalis* et *substantialis.*

Unio *accidentalis* est compositio plurium substantiarum, quarum quæque servat suum proprium *esse* et *ope-*

rari, et proinde ex talium unione non resultat nova substantia. Talis est unio inter hominem et vestem. Unio *substantialis* est ea, qua duæ substantiæ incompletæ ita sociantur, ut se mutuo compleant et totum substantiale constituant. In unam igitur naturam substantialem coeunt, tanquam potentia recipiens et actus receptus.[1]

Quum rei natura vel essentia non sit realiter distincta ab ejusdem rei substantia *(Ont.,* n. 341, 4°), intelligitur, cur unio *substantialis* sæpe dicatur unio *naturalis, essentialis,* et, quando agitur de homine, *personalis,* quia nec corpus nec anima est *sui juris* vel *totum in se,* sed ambo existunt unica subsistentia, *scil.,* personalitate humana.

Unio animæ rationalis et corporis, etsi personalis, dici nequit *hypostatica* in ecclesiastica hujus vocis significatione circa mysterium Incarnationis. Nam per unionem hypostaticam persona non constituitur, sed hæc jam subsistens naturam completam assumit et suam facit, ita ut post unionem recte dicatur: *Christus est Verbum, est homo;* at non possumus dicere: *Petrus est anima, est corpus.*

Adversarii unionis substantialis sunt Plato et Cartesius, qui docent hominem seu personam humanam constitui sola anima, quæ corpore tamquam instrumento externo utitur. Sunt alii, qui voce tenus retinent unionem substantialem, eam tamen revera negant affirmando animam et corpus esse substantias completas.

368. Prob. Thesis. Arg. I. — Unusquisque intime experitur se tali unitate animæ et corporis gaudere, ut unicum et identicum sit principium primum actionum, quas ponit. Idem namque principium significamus, sive dicamus: *ego cogito et volo,* sive dicamus: *ego sentio, scribo, moveo;* et proinde conscientia testatur idem *ego* esse spirituale et materiale. *Atqui* persona humana exprimitur per pronomen *ego; ergo* anima rationalis et corpus ita uniuntur,

[1] Agitur de composito pure finito. In ***composito theandrico*** (scil., in ***Christo)*** habetur unio *(**substantialis*** dici solet), quæ non terminatur ad unam naturam, sed ad unam personam. In qua unione natura humana non completur in ratione naturæ sed in ratione personæ (cf. ***Ont.,*** n. 357).

ut constituant unum *ego*, unam substantiam et personam.[1]

II. - Habetur unio substantialis inter duas substantias, quando hæ intrinsece coeunt in novam naturam a componentibus specifice diversam; *atqui* talis habetur inter animam rationalem et corpus; *ergo*.

Prob. min. Tunc nova habetur natura a suis componentibus specifice diversa, quando vires et operationes compositi specifice differunt a viribus et operationibus componentium (cf. *Cosm.*, n. 119); *atqui* per unionem animæ rationalis cum corpore exsurgit ens vivens vita vegetativa et sensitiva, cujus vires non sunt solius animæ nec solius corporis, sed utriusque in una substantia uniti; eadem namque vis non potest diversis inhærere subjectis. Similiter vegetatio et sensatio sunt animæ et corporis simul; sunt enim operationes organicæ (n. 199). Ipsa intellectio, etsi inorganica, non potest in præsenti vita exerceri independenter a corpore, sed ad illam corpus cum anima concurrere necesse est (n. 278). Jamvero, quum repugnet duas substantias suam actualem multiplicitatem, et proinde suas proprias activitates, retinentes, evadere unum principium operationum *(i.e.*, unam naturam), restat ut anima rationalis et corpus unam naturam, substantiam, personam, constituant.

369. III. — Si unio animæ et corporis esset tantum ac-

[1] Among the functions and activities which man calls his own, some are *unconscious*, at least generally, like digestion, secretion and circulation. Others are *conscious*, either purely spiritual, or psycho-physical, *i.e.*, either independent of, or dependent intrinsically on, the organism. All these are attributed to the same subject: *I* live, walk, eat; *I* see, hear, feel; *I* think, understand, reflect. I speak of my body and of my mind, thereby implying that neither is my complete being. This fact of consciousness shows that the complete man is not simply the organism, nor simply the soul, but something *one* resulting from the *union of both*. It may be admitted that the soul is the nobler part, but to say that it is the whole man, using the body as an instrument, guiding and directing it, is to overlook one part of the truth, for when we speak of ourselves or of other men, we also refer to the organism. The fact that all functions, material and spiritual, belong to the same person is inexplicable if the ego, including body and soul, is not one — (**Dubray**, *Intro. Phil.*, p. 483).

cidentalis, *(a)* nullum discrimen essentiale existeret inter hominem et angelum, id quod nemo affirmare auderet; *(b)* corpus esset homini extraneum ejusque naturam deprimens; dum e contra, certum est in homine plures esse potentias, quæ in anima quidem radicantur, sed exerceri nequeunt absque ejus cum corpore unione; *(c)* si in nobis anima et corpus essent accidentaliter tantum unita, tunc hæc, quum haberent *esse* proprium et independens, haberent *operari* proprium et independens; contra quod conscientia et ratio testantur. « Quamvis enim animæ sit aliqua operatio propria, in qua non communicat *(intrinsece)* corpus, sicut intelligere, sunt tamen aliquæ operationes communes sibi et corpori, ut timere, irasci, sentire et hujusmodi. Hæc enim accidunt secundum aliquam transmutationem alicujus determinatæ partis corporis. Ex quo patet quod simul sunt animæ et corporis operationes. Oportet igitur ex anima et corpore unum fieri, et quod non sint secundum *esse* diversa » (**S. Th.**, *C. Gent.*, 1, 2, a. 57).

370. Cor. 1. — Ergo anima et corpus sunt substantiæ incompletæ, quum corpus sine anima vivere et sentire non possit, et anima sine corpore sit prorsus incapax sentiendi, connaturaliter intelligendi, et extrinsece operandi. « Quod si anima humana recte dicitur substantia incompleta, non tamen est substantia incompleta propter indigentiam, quasi altero principio indigeat, ut esse et operari possit; sed ideo, quod præter potentias intellectus et voluntatis completas habet potentias sentiendi et vivendi, quæ sine materia incompletæ sunt » (**Pesch**, *Psych.*, v. i., p. 346).

Unde, anima separata non est persona, quum essentialiter sit substantia incompleta et exigat unionem cum corpore, ut potentias, quæ in ipsa radicantur, exercere possit (cf. *Ont.*, n. 352). Nihilominus in statu separationis se habet *ad modum personæ,* quum sit natura rationalis et quodammodo *sui juris.*

Cor. 2. — Ergo nec sola anima nec solum corpus dici potest « homo »; quodsi Apostolus (2 *Cor.*, c. 4) corpus

dicit hominem «qui foris est,» et animam hominem, «qui intus est,» id fit per synecdochen, sumendo partem pro toto. «Secundum Philosophum *illud potissimum videtur esse unumquodque, quod est principale in ipso;* sicut quod facit rector civitatis, dicitur civitas facere. Et hoc modo aliquando quod est principale in homine, dicitur homo; aliquando quidem pars intellectiva secundum rei veritatem, quæ dicitur *homo interior;* aliquando vero pars sensitiva cum corpore secundum æstimationem quorumdam, qui solum circa sensibilia detinentur. Et hoc dicitur *homo exterior*» (**S. Th.**, 1, q. 75, a. 4, ad 1).

Cor. 3. — Ergo quando corpus dicitur animæ instrumentum, hoc intelligendum est de instrumento interno seu substantialiter unito, minime de instrumento externo; numquam enim de ipso homine intelliguntur ea, quæ de instrumento externo sunt vera. Sic, qui dicit vestem Petri veterem esse, non propterea dicit Petrum consenescere.

371. Cor. 4. — Ergo 1°. falsum est systema *Malebranche,* qui consequenter ad suum *occasionalismum (Ont.,* n. 424), unionem animæ et corporis explicat ex sola actione Dei, qui, occasione motuum in corpore, producit in anima cognitiones et appetitiones respondentes, et, positis animæ affectionibus, producit respondentes corporis motus. — Juxta hoc systema corpus et anima non magis uniuntur, quam duæ machinæ, quas artifex concorditer movet.

2°. Falsum est systema *Leibnitz,* qui contendit unionem animæ et corporis in eo consistere, quod Deus præsciens hoc corpus tales editurum esse motus, qui cognitionibus et appetitionibus illius animæ respondeant, hoc corpus cum illa anima sociavit. Actio corporis non transit in animam, nec actio animæ in corpus, sed ex divina *harmonia præstabilita* perfecte concordant. — At talis actionum consensio non est unio, et haberi potest inter substantias latissime separatas. Ad hoc systema revocari potest illud, quod dicitur *parallelismus psychophysicus,* juxta

quem nullus existit nexus inter actus psychicos et physiologicos.[1]

3°. Falsum est *systema physici influxus,* secundum quod unio animæ et corporis explicatur per mutuam utriusque actionem *(Locke),* vel per hoc quod « anima corpus pervadens, vim suam vi corporis admiscet » *(Tongiorgi).* — Sed revera, actio physica corporis in animam est impossibilis ; corpus enim non agit nisi per applicationem partium suiipsius ad partes objecti ; anima autem caret partibus.[2] Notandum est scholasticos non negare, sed ut sequelam sui systematis adstruere, mutuum influxum actionum, non quidem animæ et corporis, sed potentiarum.

4°. Falsum est *systema Rosminianum,* secundum quod anima, qua sensitiva, jugiter sensit corpus ; quæ jugis sensatio constituit *sensum fundamentalem Rosminianum.* Anima autem, qua rationalis, corpori unitur cognoscendo hunc sensum fundamentalem ut ens aliquod. — Quod systema non *realem* sed tantum *idealem* unionem animæ et corporis admittit.[3]

[1] The theory of « ***psycho-physical parallelism,*** » stated in merest outlines, maintains that « mind » and « matter » do not interact, but that « mental processes » simply run ***parallel*** to « material processes » — (**Gruender,** *Psych. without a Soul).*

La théorie psychologique, que l'on désigne couramment sous le nom de ***parallélisme psycho-physique,*** est contenue en trois propositions fondamentales :

La vie psychique n'est qu'une série d'événements, il n'y a point d'âme-substance.

Les actes psychiques et les actions physiologiques sont inidentifiables.

Il n'y a point, il ne peut y avoir d'influx des premiers sur les secondes, ni de celles-ci sur ceux-là—(**Mercier,** *Psych.,* v. ii., p. 280).

[2] As to ***interaction,*** superior though it is to the other theories, it does not explain man's real unity, and it makes of the body an instrument of the soul instead of an intrinsic part of man. Moreover, there is the insuperable difficulty of understanding how a spiritual substance and matter can act on each other, since no contact is possible between them — (**Dubray,** *op. cit.,* p. 484).

[3] The Rosminian theory reduces the union of the intellective soul with the body to a purely ideal union, ***i.e.,*** to that union which exists between the mind understanding and the thing understood — (**Liberatore,** *On Universals,* p. 124).

372. Obj. 1. — Si anima et corpus substantialiter uniuntur ita, ut tertia realitas resultet, in actu unionis perire dicenda sunt, sicut pereunt elementa in combinatione chimica; *atqui* hoc dici nequit; *ergo*.

Resp. – *Dist. mag.* Si ita uniuntur, ut tertia realitas resultet ex mutua eorum conversione, *conc.*,. . . ex mutua suarum realitatum communicatione, *neg. Contradist. min.* Dici nequit fieri conversionem animæ et corporis, *conc.*; dici nequit animam suam entitatem corpori communicare et vicissim, ***neg.*** Cavendum est, ne unio animæ et corporis cogitetur ad modum unionis chimicæ. Corpus enim et anima se habent ad invicem ut materia et forma, elementa chimica sunt actu corpora, quorum quodque habet materiam et formam propriam. In chimica combinatione hæc elementa substantialiter mutantur, et nova forma novi corporis constitutiva educitur, quæ existit realiter distincta a materia, cui suum esse communicat. Unde, elementa non amplius existunt actu in composito (n. 121). Anima unitur cum corpore, ut forma cum materia, et proinde actu et formaliter permanent et se invicem perficiunt; corpus enim animam idoneam reddit ad exercendam suam virtutem interiorem, quam alioquin nullatenus posset exercere; et anima corpus specifice determinat et vivificat.[1]

Obj. 2. — Quidquid advenit rei jam existenti, accidentaliter ei advenit; *atqui* corpus advenit animæ jam per creationem existenti; *ergo* eorum unio non est substantialis, sed tantum accidentalis.

Resp. — *Dist. maj.* . . accidentaliter advenit, si advenit ut ulterior determinatio, *conc.*, si advenit ei ut subjectum determinandum

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[1] The presence of the soul in the body is essentially causative; that is to say, the soul is united with the body precisely because the soul is for the body the cause, the source of something, or some new reality, of some higher quality. Union between spirit and matter, which would not be causative, on the part of the spirit, is unthinkable. The spirit is wedded to the body as long as it is able to be to the body a causative power; if matter be such as not to be a fit recipient of that causative influence of the spirit, the union is, *ipso facto*, at an end.

It may be said therefore that the spirit's causative power, actually exerted on a fit material subject, is the only link that keeps the spirit tied to the body. The moment the soul's causative influence on the body ceases, from lack of an appropriate subject, I mean normally constituted organic matter, the soul turns on itself, enters, that very moment, upon the pure spirit state.

The causative power of the soul on the body is, of course, something quite peculiar. It causes as an immanent principle, not as an external agent. Its causality is called by the schoolmen a formal causality, as opposed to an efficient causality. — **(Vonier, *The Human Soul*, ed. 2. p. 26).**

per unionem cum alia substantia ad talem unionem naturaliter destinata, *neg. Contradist. min.* et *neg. concl.*

Obj. 3. — Anima rationalis non potest cum corpore uniri substantialiter, quin ipsa materiæ communicet suam naturam spiritualem; *atqui* materia nullam habet aptitudinem ad participandam naturam spiritualem; *ergo.*

Resp. — *Dist. maj.* . . quin ipsa materiæ communicet suam naturam spiritualem *formaliter,* ita ut ipsa materia evadet spiritualis, *neg.;* quin anima materiæ communicet suam naturam spiritualem, quatenus hæc est virtualiter sensitiva et vegetativa, *conc. Contradist. min.* et *neg. concl.* Anima rationalis suam naturam materiæ communicat, sed non præcise ut est spiritualis participatur a materia sed prout est radix facultatum inferiorum.[1]

ART. II.

DE MODO, QUO ANIMA CORPORI UNITUR.

373. THESIS XXXVIII.—Anima rationalis ita corpori unitur, ut sit vera, per se, et immediata ipsius forma substantialis: et ideo est forma corporis, in quantum est corpus.

Stat. Quæst.—Prima pars thesis exprimit «catholicam sententiam ac doctrinam de homine, qui corpore et anima ita absolvitur, ut anima, eaque rationalis, sit vera, per se, atque immediate corporis forma». Quæ verba deprompta ex Litteris, quibus (1857) *Pius IX.* damnavit errores Güntheri, censeri possunt ut formula, quæ optime exprimit doctrinam Ecclesiæ.[2]

[1] In the human soul we must distinguish between the intellective essence and the intellective *potentia*. It is as being the intellective essence that the human soul is said to be the form of the body, and not as being the intellective *potentia,* which it retains within itself alone. *Secundum essentiam suam dat esse tali corpori; secundum potentiam vero operationes proprias efficit* (C. Gent., l. 2, c. 69). The reason of this is that the human soul is the form of the body, but not totally comprehended by the body as to its perfection. It gives being to the body, but according to the capacity of the same, which capacity does not extend beyond vegetative and sensitive degrees. These two degrees then, so far as the being of the essence is concerned, it imparts to the body, by reason of virtually containing the inferior forms. But as being intellectual it exceeds the potentiality of the body, and remains alone the subject of the *potentia* that results from it — (Liberatore, *On Universals,* p. 114).

[2] If, in a certain sense, philosophy is summed up in the know-

374.—Juvabit hic explicare sensum verborum, quibus hæc pars thesis enuntiatur.

Anima dicitur 1°. **forma substantialis** *corporis,* quia est elementum ita corpus determinans, ut vita, quam ei tribuit, non sit accidentalis et superveniens, sed essentialis et constituens ejus naturam specificam (cf. p. 147).

2°. —**Vera** *forma,* i.e., secundum propriam vim vocis, non sensu analogo, ut quum verba dicuntur *forma* sacramenti. Itaque *ex reali* sui unione cum corpore resultat **unum ens physicum,** *scil.,* **homo** (n. 366).

3°. — **Per se,** quia non *per accidens* evenit, ut anima corpus informet, sed *ex natura sua* ad hanc unionem, qua suum naturale complementum acquirit, destinatur. « Hac particula tres præcipue errores excluduntur. Primus est eorum, qui dixerunt animæ intellectivæ connaturale non esse cum corpore jungi, sed hoc contingere in pœnam admissi sceleris, ut in corpore quasi in carcere includeretur. Secundus est error eorum, qui dixerunt animam rationalem uniri corpori non *secundum seipsam,* sed per

ledge of man, the union of the intellectual soul with the body, which union makes up the man, is, without any doubt, in the highest degree a philosophical question. It is also a theological question, by reason of its relation to the most sacred mystery of the Incarnation of the Word: and therefore the Church has not left it to the free discussion of philosophers, but by its own divine authority, determined and fixed the same, defining it to be a Catholic dogma, that the intellective soul in man is united to the body as the form of the body. We have three authoritative documents in proof of this. The first is in the General Council of Vienne, Dauphiné (1311) which expressly condemns, as heretical, anyone who should pertinaciously deny that the intellective soul is *per se* and essentially the form of the human body. The second is in a decree of the fifth Council of Lateran, also a General Council (1512), which in condemning on the one part Pomponazzo's error about the immortality of the human soul, and on the other, that of the Averroists of the University of Padua, about the intellective principle in each individual man, repeats the same definition, that the human soul is truly, *per se,* and essentially the form of the human body. The third is in the Apostolic Letter of Pope Pius IX. to the Archbishop of Cologne (1857), in which the Pontiff, condemning the errors of Gunther, declares it to be Catholic doctrine that the rational soul in man is the true, *per se,* and immediate form of the body — (**Liberatore,** *ib.,* p. 107).

aliquam operationem vel effectum, sicut motor unitur mobili. Quare, Conc. Viennense expresse definit *substantiam ipsam* animæ intellectivæ vere et per se esse formam. Tertius denique error est, quo anima rationalis fingeretur esse forma, non ipsius corporis, sed tertii intermedii, v.g., *animæ ab ea distinctæ,* quæ deinde munere formæ fungeretur. Hoc postremum expresse declaratum habemus a Pio IX. in cit. Litt. per vocem *immediata;* quæ implicita est in particula *per se* » (**Schiffini**, *Psych.*, p. 386).

4°. — **Immediata**, i.e., ipsa propria entitas animæ rationalis (nihil interveniente, neque alia anima neque aliqua facultate aut actione) sese communicans est id, quo corpus est vivens humanum.

Hæc dicta sunt de explicatione eorum, *quæ formaliter* continentur in proposita formula. « An vero *legitima consecutione* inde colligatur, vel existentia *primæ materiæ,* prout hæc intelligitur in doctrina scholastica, præsertim S. Thomæ, vel sententia ejusdem Aquinatis de *unitate formæ substantialis* in eodem corpore, *id complures quidem* RATIONALI DISCURSU *deducunt, sed minime dici potest quasi ab Ecclesia definitum, nec opposita sententia censuram aliquam theologicam meretur, quamdiu Ecclesiæ judicio res ulterius determinata non fuerit.* Idcirco prudentiæ limites excederet, ac temeritatis merito argueretur is, qui in rebus ejusmodi propriam sententiam sic propugnaret, ut ceteros contra sentientes quasi violatæ religionis vel sublestæ fidei viros traduceret » (**Schiffini**, *loc. cit.).* His verbis indicatur sententia in altera parte thesis notata, quamque oportet hic exponere.

375. Sunt igitur philosophi catholici, qui, licet admittant animam rationalem esse formam substantialem corporis, negent tamen eam esse formam corporis, in quantum est corpus. Hæc sententia duplici modo propugnatur. Sunt qui, utpote atomismo vel dynamismo addicti, negent corpora constare duplici principio substantiali, sed ea esse affirment aggregationes substantiarum *in ratione substantiæ* completarum (cf. *Th.* xiii., xiv), et, quod consequens est, rejiciant doctrinam asserentem animam

rationalem esse formam substantialem corporis *qua corpus est.* Hi proinde docent animam, pariter completam in ratione substantiæ, corpus constituere *vivens, sensitivum, humanum;* quod quidem efficit, inquiunt, permeando et permiscendo vires suas viribus corporis seu potius substantiolarum aggregato (cf. *Tongiorgi,* Psych., n. 185, *Palmieri,* Psych., th. 12).[1]

Sunt et alii, qui non oppugnant, sed strenue defendunt doctrinam scholasticam de materia et forma, ponunt tamen formam ab anima distinctam, qua corpus vivens, constituatur in esse corporis.[2] (Hanc formam ob munus, quod gerit, vocant *formam corporeitatis,* cf. n. 175). Ad materiam sic aliquatenus actuatam et determinatam accedit anima; quæ, si sit rationalis, constituit corpus, jam aliunde in suo esse primo existens, corpus vivens et humanum.[3] Hæc est celebris forma scotistica, quæ olim

[1] Notandum est Patrem **Palmieri**, postea *(De Creatura*, p. 277, op. posthumum), hanc suam sententiam retractasse: « Sunt qui censeant (inquit) corpus et animam substantias esse, completas quidem in ratione substantiæ. . .', substantias vero incompletas in ratione naturæ. . . Nihilominus hæc ratio explicandi unionem animæ et corporis philosophis haud satisfacit; et substantialem illam unionem quæ fide docetur, nequaquam attingit; eamque nos, licet olim comprobaverimus, nunc insufficientem prorsus esse non dubitamus affirmare ».

[2] « Quid significatur per corpus in illa definitione [supra n. 175.] scholastici non sunt concordes, neque etiam concordes erant eo tempore, quo celebratum est Conc. Viennense; si enim quæras a scotistis quid veniat in illa definitione nomine corporis, respondebunt, venire corpus jam constitutum in ratione corporis per formam corporeitatis, quod tamen discipuli S. Thomæ concessuri non sunt. Concilium igitur sic adhibuit illam vocem, ut nulli sententiæ catholicæ præjudicaret, sed eas suis defensoribus defendendas permitteret » — (**Huarte**, *op. cit.*, p. 258).

[3] St. Thomas distinctly teaches that the spiritual soul is not only the *forma corporis*, but the *unica forma corporis*. He conceives the *compositum humanum* as consisting not of body and soul, but of primordial matter and soul, because it is the spiritual soul which renders the body *materia secunda*, i.e., constitutes it a body, and thereby gives it *esse corporis*. The Scotists, on the other hand, hold that the body is first constituted by a separate *forma corporeitatis*, and subsequently receives the intellectual soul as its essential form. In order to obtain a *unum per se* as the result of this synthesis, the Scotists conceive the *forma corporei-*

etiam extra scholam scotisticam plures habuit defensores, quamque ut probabiliorem multis argumentis sustinet *Mendive*, Psych., p. 231; necnon *Donat*, qui tenet «materiam primam primo per formas materiales ad diversas atomos et compositiones chimicas usque perfectiores determinari, tunc demum ulterius per supervenientem animam informari vitaque donari» *(Psych.*, n. 577).

Quod ad rem nostram attinet, hæ sententiæ in idem incidunt; ambæ enim statuunt animam rationalem uniri substantialiter corpori jam in suo esse corporis constituto. At quum theoria Tongiorgi et Palmieri innitatur principiis falsis jam in *Cosm.* confutatis, nihil amplius de ea hic explicite dicetur. Observa tamen juxta hos animam et corpus mediantibus viribus suis uniri. Sensus igitur verus totius thesis hic est: corpus ab anima rationali ut a sua forma substantiali habet esse corpus humanum, esse corpus animatum, esse corpus, nullo principio quocumque ab ipsa anima distincto interveniente aut præveniente.

376. Prob. Thesis. —Pars 1ª. *(. . . vera, per se et immediata forma).* **Arg. I.**—1°. *(vera).* Anima rationalis est *vera* forma substantialis corporis, si per ejus accessum (vel recessum) contingit in corpore, non aliqua mutatio accidentalis, sed mutatio vere substantialis; principium enim, cujus accessu corpus intrinsece constituitur in natura specifice nova, dicitur forma substantialis. *Atqui* per accessum animæ rationalis corpus, quod per se non est vivens, constituitur intrinsece vivens (per ejus recessum corpus vivens fit intrinsece non vivens) seu mutatur substantialiter. *Ergo* anima rationalis est *vera* forma substantialis corporis.

2°. *(per se).* Anima rationalis est per se forma substan-

tatis to be an imperfect, subordinate form, which offers no obstacle to the substantial completion of the whole by the spiritual soul. . . But the *esse corporis* is not immediately communicated by the soul: it is derived from the *forma corporeitatis* which is distinct from the soul — (**Pohle-Preuss**, *God the Author of Nature, etc.*, p. 147).

tialis corporis, seu *per se* et *essentialiter* ordinatur ad intrinsecam unionem cum corpore, si habet potentias et operationes intrinsece dependentes a corpore : rei enim natura et finalitas optime ex ejus potentiis et operationibus dignosci possunt (n. 135). *Atqui* plures potentiæ animæ rationalis intrinsece pendent a corpore (*i.e.*, indigent uniri organo), ut sint completæ et ad operationes suas exercendas expeditæ ; — id, quod demonstrat animam rationalem *per se* et *ex natura sua* ordinari ut formam substantialem ad unionem cum corpore.

3°. *(immediata)*. Proprium est formæ substantialis, ut per communicationem sui *esse* intrinsece determinet corpus ad aliquam speciem substantiæ corporeæ ; quæ communicatio, quum non fiat per aliquam actionem (causalitas enim formæ non consistit in actione), importat intimam et *immediatam* utriusque unionem in eodem esse. *Atqui* per animam rationalem corpus humanum intrinsece determinatur ad suam speciem propriam et habet omnia lineamenta, organa, ac proprietates, quibus corpus humanum distinguatur ab omni alia specie corporis; *ergo* anima rationalis est *immediata* forma substantialis corporis.[1]

377. Pars 2ª. *(anima est unica forma corporis)* Arg.— Si anima rationalis non esset unica forma substantialis corporis, sed aliam præsupponeret, qua materia prima constitueretur in *esse* corporis, nullo modo esset vel dici posset forma substantialis, sed tantum accidentalis. Etenim forma corporeitatis, fatentibus scotistis, est forma substantialis, et ideo materiæ primæ per ipsam actuatæ nihil deest in linea completæ substantiæ ; nam « quælibet forma substantialis facit ens completum in genere sub-

[1] The human soul, as intellective, must be said to be the immediate form of the body. For the immediate result that it has to give is the essence of man, humanity; and humanity signifies formally, in its conception, not merely a soul, but a rational or intellective soul. If it were otherwise — if we had to suppose that the union of the human soul with the body is by means of the sensitive part — the proximate and immediate result would be an animal, which would be found afterwards to be a man, as if *per accidens*, i.e., through the intellective part conjoined with the sensitive — (**Liberatore**, *op. cit.*, p. 113).

stantiæ ; facit enim *ens actu, hoc aliquid ;* quidquid igitur post primam formam substantialem advenit rei, accidentaliter adveniet » (S. Th., *C. Gent.*, 1. 2, c. 58). Nec quidquam valet dicere compositum substantiale, sic constitutum, esse imperfectum et plane insufficiens ad existendum per se absque anima. *Enimvero,* si forma corporeitatis conjuncta cum materia non constituit compositum capax existendi per se, nullo jure dicitur forma substantialis ; materia enim est substantia incompleta et in potentia ad aliquem actum, forma est pariter substantia incompleta et actus materiæ, ex unione utriusque resultat substantia completa, quæ, ut existat, nulla alia forma superveniente indiget.

378. — Præterea, ideo inducitur forma corporeitatis, quia « forma animæ non manente, manet corpus, et ideo universaliter in quolibet animato necesse est ponere illam formam, qua corpus est corpus, aliam ab illa, qua est animatum » *(Scotus).* Atvero, si corpus manet (et corpus plantæ longissime manet), dicta forma est capax constituendi compositum completum.

Denique, inutilis est forma corporeitatis *scotistarum,* quum anima rationalis *virtualiter* contineat omnes formas inferiores, et ideo « per eam homo non solum est homo, sed animal, et vivens, et *corpus,* et substantia, et ens » (S. Th., *Disp.*, III, a. 3). Recedente vero anima, educitur nova forma vel potius complexus formarum, juxta naturam partium, quibus congeries corporum producitur eamdem quantitatem quamdamque similitudinem retinens cum corpore animato.[1] Harum formarum causa efficiens invenitur in ipsis elementorum corporis viventis viribus, quæque, *virtute* in corpore contentæ, simul atque anima recedit, liberantur, et agere et reagere incipiunt et pergunt, donec gradatim corpus in elementa resolvunt. Per mortem igitur non solum corpus et anima separantur,

[1] « Le cadavre est un amas de corps plus ou moins complexes, en voie de désagrégation ; leur unité n'est qu'*apparente ;* nous la désignons sous le nom *collectif* de corps mort ou de cadavre » — (**Mercier**, *Psych.*, v. ii., p. 304).

sed et corpus dissolvitur, unitatem nonnisi aggregationis retinens sub qua unaquæque pars suam habet formam, quæ formæ simul sumptæ aliquando dicuntur forma *cadaverica*. Hic observare oportet corpus Christi mortuum et vivum fuisse idem numero propter identitatem Hypostasis, non tamen totaliter idem, quum vita sit de essentia corporis viventis (cf. *S. Th.*, 3, q. 50, a. 3).

379. Cor. 1. — Ergo falsa est doctrina *Averrois* asserentis unicam esse animam *rationalem* omnium hominum. Cui errori affinis est ille *V. Cousinii* dicentis existere rationem impersonalem nulli homini propriam sed omnibus communem. Exinde enim sequeretur *(a)* totum genus humanum esse unum hominem, quum anima *rationali* homo formaliter constituatur; *(b)* esse in omnibus eamdem voluntatem, etc.; *(c)* esse aliquid formaliter universale a parte rei. Opinionem asserentem « animam intellectivam mortalem esse aut *unicam in cunctis hominibus* » reprobavit *Leo X.* in Conc. Later. V.

Cor. 2. — Ergo falsa est doctrina *Platonis,* qui, teste Aristotele, tres animas inesse homini dicebat; *intellectivam* in cerebro, *sensitivam* (juxta alios: *irascibilem)* in corde, *vegetativam* (juxta alios: *concupiscibilem)* in hepate.[1]

Falsa etiam est doctrina *Occami, Baconis* et (in sæculo xix) *Güntheri,* dicentium hominem duas habere animas, aliam *intellectivam, sensitivam* aliam, quæ est virtualiter *vegetativa*. Quam doctrinam *Baltzer* (opinione Güntheri damnata, cf. *notam,* p. 449) modificavit, et docuit animam sensitivam esse cum intellectiva identicam, distinctam autem ab anima vegetativa.[2] Atvero, nexus, qui, teste experientia interna, existit inter potentias intellectivas,

[1] Plato never speaks of « souls » except in reference to distinct bodies. He speaks of « the soul » of man as familiarly as we do. . . . In the ultimate analysis of Plato's meaning nothing more will appear, I believe, than the triple division, accepted by Aristotle and St. Thomas, of νοῦς, θυμός, ἐπιθυμία, three phases of one soul, the first inorganic and spiritual, the two latter organic and involving connection with the body — (**Rickaby**, *Of God and His Creatures,* p. 120).

[2] Hanc sententiam Pius IX. condemnavit (1860).

sensitivas et vegetativas clare ostendit eas ex eodem principio oriri. Etenim, *(a)* quo magis intenditur activitas vegetativa, eo magis impeditur activitas intellectiva; *(b)* quo magis intenditur activitas sensitiva, eo magis impeditur activitas vegetativa et intellectiva, ut quum vehemens passio perturbat intellectionem, et impedit functiones vegetativas; *(c)* quo magis intenditur activitas intellectiva, eo magis impeditur activitas sensitiva (v.g., *visus et auditus)* et vegetativa (v.g., *digestio).*

Jamvero, hæc facta, quæ minime explicari possunt, si plura sunt in homine principia vitæ (quia facultates, quæ non radicantur in eodem principio quæque insuper immanenter agunt, sese in agendo impedire nequeunt), optime explicantur, admisso uno tantum triplicis vitæ principio; tunc enim vis unius animæ diffunditur in plures potentias, et proinde quo magis influit in unam potentiam, eo minis influit in ceteras.

380. ***Dicunt Guntheriani.*** Lucta non habetur nisi inter duo; *atqui* homo sæpe experitur luctam inter appetitum superiorem et inferiorem; ***ergo*** in homine duæ existunt animæ.

Resp. — ***Dist. maj.*** Lucta externa. . . ***conc.;*** interna, ***subdist.,*** nisi sint potentiæ diversæ, ***conc.***; nisi sint diversa principia, ***neg.***

Instant. — Atqui inter potentias ejusdem principii lucta est im possibilis.

Resp. — Inter potentias ex eodem principio dimanantes et ad eundem finem tendentes, ***conc.;*** inter actus potentiarum ejusdem principii ad diversos fines tendentium, ***neg.*** « Si rite res perpenditur, pugna, de qua agitur, non exhibet oppositionem originis, quatenus postulet characteres oppositos in radice, a qua tandem potentiæ pullulant. Sed est mera contrarietas termini, quatenus potentiæ in diversa objecta feruntur, quæ sæpe invicem adversantur. Id autem ostendit diversitatem potentiarum, non principii; secus ipsa anima sensitiva nequiret esse una, quum sæpe passionibus agitatur inter se omnino contrariis. Immo, si vera loqui volumus, pugna, quam experimur inter propensiones animales et rationales, manifestat potius in nobis unitatem animæ. Etenim iis omnino sentimus nos, contrariis quasi ventis, sic propelli, ut impetus, quo huc atque illuc ferimur, intime a nobis ipsis emergat et nos quasi dilaceret. Quod plane sentiri non posset, nisi propensiones illæ ab uno eodemque principio originem ducerent. Neque id mirum videri debet; quandoquidem anima humana ita est una quoad essentiam, ut sit multiplex quoad virtutem; atque ideo ra-

dix esse possit plurium potentiarum, quæ aliquando objective inter se luctantur, propterea quod diversæ sunt et diversa objecta respiciunt » (**Liberatore**, *Psych.*, p. 348).

ART. III.

DE SEDE ANIMÆ RATIONALIS.

381. THESIS XXXIX. — Anima rationalis secundum suam essentiam est tota in toto corpore et tota in singulis ejus partibus; secundum suam virtutem non est tota in singulis partibus.

Stat. Quæst. — Qui substantialem animæ et corporis unionem non accipiunt, in innumeras abeunt sententias, quando sedem animæ in corpore determinare volunt. Sic *Plato* et *Cartesius* eam in cerebro collocarunt, alii eam in corde, alii in sanguine, alii in cerebello, alii in medulla spinali, alii in aliis partibus eam residere affirmarunt; at *Aristoteles*, *S. Thomas* et philosophi catholici universim extra scholam cartesianam docent animam rationalem non in aliqua parte dumtaxat, sed in toto corpore et in singulis ejus partibus indivisam et indivisibilem inesse.[1]

Si vero attendimus ad animæ potentias, dicendum est potentias spirituales, utpote supra materiam elevatas, in nulla corporis parte inesse, sed in anima sola, et ideo ubique in corpore esse, sed non ut in subjecto. Quia vero intellectus habet extrinsecam dependentiam a phantasia, cujus organum est cerebrum, intellectus dici solet, nec *sub hoc respectu* improprie, esse in capite. Reliquæ autem potentiæ non dimanant ab anima nisi in iis corporis partibus, quæ proportionantur ad proprium exercitium uniuscujusque. Unde, quantum ad has potentias, anima non est tota in singulis partibus.

382. Prob. Thesis. — Pars 1ª. *(. . . tota in toto, et tota in*

[1] « Anima *(belluina)* dici potest tota in toto corpore et tota in singulis partibus esse, non quidem eo sensu, ut animæ realitas in singulis bruti partibus tota insit, sed quatenus nonnisi ut una tota corpus et singulas ejus partes informare potest. Partes enim animæ tam intime inter se connectuntur, ut eæ, quæ singulas partes informant, id nonnisi cum reliquis unitæ facere possint. Scilicet corpus bruti perfecti nonnisi ut totum aliquod vivificari potest » — (**Haan**, *Cosm.*, n. 214).

singulis partibus). Arg. I.—Anima rationalis nequit exserere suas operationes (quum hæ sint immanentes) nisi ubi adest; quod constat ex natura actionis vitalis (n. 167). *Atqui,* ex una parte, non est in homine nisi unum idque simplex principium vitæ; ex altera vero parte, in toto corpore et in singulis ejus partibus perficiuntur actiones vitales, sin minus sensitivæ, certo vegetativæ, quum totum corpus et singulæ ejus partes nutriantur; *ergo.*

II.—Anima rationalis, utpote essentialiter simplex, ubicumque est, tota est; *atqui* est in toto corpore et in singulis ejus partibus, quum toti et partibus tribuat esse specificum, et quidem per immediatam suiipsius unionem cum materia prima; *ergo.*

III. — Ideo adversarii volunt sedem animæ esse cerebrum aliamve corporis partem, quia fieri non posse existimant, ut substantia simplex sit cum toto corpore coextensa; *atqui* quælibet pars corporis est extensa; nulla igitur est ratio, cur non occupet totum corpus. *Neve dicas* locum animæ esse indivisibile punctum corporis; tale enim punctum in rebus physicis non datur; quodsi daretur, illud deberet esse aliquod centrum, in quod omnes nervi confluerent. Jam, physiologi negant ullum esse commune centrum, ubi nervi conveniant; et si tale centrum daretur, non posset esse punctum indivisibile, quum nervi, utpote compositi et extensi, in tali puncto coire non possent. . . .

383. Pars. 2ª. (. . . *non secundum totam virtutem* . . .) Arg. – Plures sunt animæ potentiæ, quæ, ut formaliter existant et suas proprias operationes exerceant, postulant organa diversa et operationibus propriis accommodata; *atqui* hæc organa non sunt in qualibet parte corporis; *ergo* anima non est secundum totam virtutem suam in singulis corporis partibus, sed « secundum visum est in oculo, secundum auditum est in aure, et sic de ceteris » (S. Th., 1, q. 76, a. 8).

Præterea, anima, si secundum totam suam virtutem corpori inesset, illud constitueret capax intelligendi, sicut illud constituit capax sentiendi et vegetandi; *atqui* repu-

gnat, ut corpus tantam virtutem habeat (n. 268); *ergo.*

384. *Dices* 1°. — Si anima esset in toto corpore et in qualibet parte, recte dicere possemus (1) intellectum esse in pede; (2) pedem cæterasque partes esse homines, quum anima rationali et corpore constaret; quæ quidem nemo diceret; ***ergo.***

Resp. ad (1). — Dicere possemus intellectum esse in pede ut in subjecto, aut in loco ubi est facultas sensitiva, a qua dependet in operando, ***neg.;*** . . . intellectum esse in anima pedem informante, ***conc.***

Resp. ad (2). — 1°. ***Retorqueo.*** Ergo illa pars *(v. g.,* cerebrum) ad quam adversarii coarctant animam, esset homo. 2°. Homo constat anima et corpore adaptato ad essentiales animæ operationes, ***i.e.,*** corpore integrali, ***conc.,*** secus, ***neg.*** « Animal est quod componitur anima et corpore ***toto,*** quod est primum et proportionatum ejus perfectibile. Sic autem anima non est in parte. Unde, non oportet quod pars animalis sit animal » **(S. Th.,** 1. q. 76, a. 8, ad 2).

Dices 2°. — Si anima toti corpori inest, (1) per totum corpus diffunditur, (2) aucto vel diminuto corpore, augetur vel diminuitur anima; ***ergo.***

Resp. ad (1). — Diffunditur sensu materiali *(v.g.,* sicut aer), ***neg.;*** sensu spirituali, ita ut in sua substantia sit præsens singulis partibus, ***conc.*** Quo sensu S. Scriptura dicit Deum ***replere*** cælum et terram.

Resp. ad. (2). — Aucto vel diminuto corpore, anima incipit plures vel pauciores partes informare, et sic augetur vel diminuitur *quoad virtutem et per accidens,* quatenus vim suam intra majorem vel minorem spheram exercet, ***conc.; per se realiter, neg.***[1]

385. Schol. — Præter partes corporis constitutivas sunt aliæ quasi supplementariæ, de quibus, utrum animentur anima rationali, non conveniunt doctores. Tales partes sunt capilli, ungues, dentes, ossa, et præsertim sanguis. Cf. *De Maria* (v, ii.), *Pesch* (Psych., v. i.), et præ aliis *Urráburu* (Psych., v. iii.).

[1] « Differunt inter se anima dependens a materia et anima independens, quatenus in ea, quæ dependet, existere et informare coincidunt; ea autem, quæ independens est, existere potest, quin informet materiam. Ideoque si supponimus partem hominis vivam abscindi, tota anima, quæ partem abscissam vivificaverat, nec corrumpitur nec separata manet ne se recipit in partem adhuc vivam sed tantum cessat ab informanda illa parte et jam non extendit informationem nisi ad partes adhuc vivas. Hoc fieri potest, quia in anima spirituali non idem est informare et existere, quod in anima materiali obtinet, quæ propterea dicenda est simul cessare ab informando et existendo » — **(Haan,** ***Cosm.,*** n. 217).

Satis communiter admittitur capillos, ossa, dentes, ungues esse animata anima rationali; habent enim, juxta physiologos, saltem in suis radicibus contextum cellularem; habent venulas nutritioni inservientes et crescunt per intussusceptionem materiæ, non per externam accretionem.

386. Difficilior est quæstio de sanguinis animatione. Imprimis inveniuntur plures qui, quid de hac re sentiendum sit, ignorent. Alii cum *Cajetano* putant sanguinem esse animatum, quia in Incarnatione Verbum assumpsit sibique immediate univit sanguinem; at non assumpsit nisi quæ ad integritatem humanæ naturæ pertinebant (cf. *Hugon,* Phil, Nat., v. iii., *Monaco,* Psych.).

Multo communior videtur esse opinio sanguinis animationem negans; pro qua opinione citantur *S. Bonaventura, Alb. Magnus, Suarez, Capreolus, De Lugo, Lessius, A Lapide* aliique apud *Urráburu.* cf. *Donat,* n. 587.

Ii scholastici, qui opinionem negativam defendunt, non infitiantur sanguinem ad integritatem corporis pertinere, sed in corpore distinguunt partes *principales,* quæ organicæ sunt et operationes vitales exercent; et *secundarias,* quæ licet non sint organicæ nec vitaliter operantur, necessariæ tamen sunt ad organismi conservationem. Hujusmodi, inquiunt, est sanguis, quum sit corporis nutrimentum. Jamvero, nutrimentum convertitur in substantiam corporis aliti, et proinde transit ab una forma ad aliam, quod quidem dici non posset de sanguine, si jam anima rationali informaretur. Præterea, anima non potest animare partes discontinuas, secus enim posset manere in manu abscissa; sanguis autem non continuatur cum ceteris corporis partibus, semper enim per venas fluit.

Hanc sententiam confirmant testimonio: 1°. *S. Thomæ* (qui pro altera etiam sententia citatur): — « Humidum nutrimentale est, quod nondum pervenit ad suscipiendum naturam speciei, sed est *in via ad hoc sicut est sanguis* » (1, q. 119, a. 1, ad 3). « Materia corporis Christi non fuit caro et os B. Virginis, nec aliquid, quod fuerit

actu pars corporis ejus, sed sanguis, qui est *in potentia caro*» (3, q. 31, a. 6); 2°. *physiologorum,* juxta quos in parte liquida sanguinis innatant quidam globuli plus minusve solidi, quorum functio est, ut impetant devorentque microbia et alia hujusmodi organismo noxia; nec solum inter systema vasculare hoc faciunt, sed, egressi extra, in aliis quoque organismi partibus.[1] Hi igitur globuli vivunt, et quidem singuli animis propriis, quum huc illuc per organismum se moveant; et proinde sunt ab organismo anima rationali informato distincti, seu, hoc sanguinis elementum non est informatum anima rationali. Jure tamen cum *Vaissière* dici potest: «de sanguine probabilius videtur eum non informari, sed ea quæstio vix solvi posse videtur ex principiis philosophicis vel scientificis» *(Psych.,* p. 188).

[1] Diapedesis, or emigration of the white corpuscles, occurs to a small extent in health. But it is much increased in inflammation and may go so far as to form a large collection of leucocytes *(i.e.,* white corpuscles) outside the vessels. . . The real meaning of the process of inflammation is a subject which is being much discussed now, but it may be interesting to state briefly the views of Metschnikoff, who has in recent years been a prominent investigator of the subject. Even if these views do not represent the whole truth, it can hardly be doubted that the phenomena described play a very important part in the process. Metschnikoff teaches that the vascular phenomena of inflammation have for their object an increase in the emigration of leucocytes, which have the power of devouring the irritant substances, and removing the tissues killed by the lesion. They are therefore called ***phagocytes*** (devouring or scavenging corpuscles). It may be that the microbic influence, or the influence of the chemical poisons they produce, is too powerful for the leucocytes; then they are destroyed, and the dead leucocytes become pus corpuscles: but if the leucocytes are successful in destroying the foreign body, microorganisms, and disintegrated tissues, they disappear, wandering back to the blood-vessels — (**Halliburton**, ***Handbook of Physiology,*** p. 294).

CAPUT TERTIUM.

De Origine Animæ Rationalis.

387. De origine animæ rationalis diversæ excogitatæ sunt sententiæ. Prætermissis theoriis pantheisticis (quæ dicunt animam rationalem esse particulam e divina substantia excerptam - quasi Deus esset compositus et divisibilis; vel animam esse ipsam divinam substantiam seipsam evolventem — quasi Deus non esset actus purissimus), hic agemus de *traducianismo* et de *creatianismo*.

ART. I.

DE TRADUCIANISMO.

388. THESIS XL. — Origo animæ rationalis nulla theoria traducianismi explicari potest.

Stat. Quest. *Traducianismus* seu *generatianismus* est systema affirmans animam rationalem parentibus propagari seu traduci. Quæ traductio diversis modis explicatur. Alii enim dixerunt animam, non secus ac corpus, produci generatione materiali.[1] Alii opinati sunt animam per quamdam generationem spiritualem a generatione corporis distinctam existentiam accipere. Cui sententiæ *S. Aug.* et nonnulli id temporis Patres Ecclesiæ plus minusve adhæserunt, quia, tali doctrina admissa, peccati originalis transmissio facilius declararetur.[2]

[1] This opinion was defended in the East by Apollinaris, and in the West, apparently by Tertullian — (**Pohle-Preuss**, *God, the Author of Nature, etc.*, p. 166).

[2] « S. Augustinus ideo inter generatianismum et creatianismum anceps fuit, tum quia nihil de hac re clare traditum in sacris Bibliis videbat, ut sæpe notat in suis scriptis, tum quia, admissa creatione animarum, difficile esse arbitrabatur explicare propagationem peccati originalis generatione parentum. Quæ difficultas non potuit non vehementer S. Augustini aliorumque Patrum mentem torquere, quia pelagiani negationem originalis peccati ex eo probabant, quod singulæ animæ a Deo immediate creentur: quare mirum non est Patres illos dubitare potuisse. Hanc rationem dubitandi expri-

Circa medium sæculum jam elapsum quidam in Germania docuerunt animam originem habere, non traduce materiali aut spirituali, sed creatione quadam secundaria naturæ humanæ communicata. Quam opinionem S. Congr. Indicis proscripsit (1857).

Tandem, *Rosmini* censuit animam, quatenus est sensitiva, generari, eamque postea fieri intellectivam per manifestationem ideæ entis illi divinitus factam. Eadem S. Congr. hanc sententiam reprobavit (1887)[1]

389. **Prob. Thesis. Arg.** — 1°. Animæ origo explicari non potest per *traducianismum* **materialem**, quia, «quum *fieri* sit via ad *esse*, sic alicui competit *fieri*, sicut ei competit *esse*» (S. Th., 1, q. 90, a. 2); *atqui* animæ competit *esse* a materia independens; *ergo*.

Præterea, impossibile est, ut vires materiales producant effectum immaterialem, *i.e.*, animam.

2° *Non per traducianismum* **spiritualem**, quia, quum omnis anima rationalis sit omnino simplex, impossibile est, ut per divisionem unius animæ aliæ producantur.

3° *Non per vim creativam* **communicatam**, quia creatio postulat potentiam infinitam (n. 31).

4° *Anima sensitiva non fit intellectiva per manifestationem ideæ entis*, tum quia idea entis utpote universalissi-

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mit non semel S. Aug., eaque sola se præpediri satis innuit, ne sententiam de creatione singularum animarum, ad quam propensum se profitetur, tamquam certam et unice veram complectatur. Unde etiam de doctrina creatianismi numquam non loquitur honorifice; non veretur tamen illos, qui *propaginem animarum defendunt, inconsideratæ* temeritatis accusare» — (**Urráburu**, *Psych.*, v. iii., p. 701).

[1] Creationism held full sway in the theological schools of the Middle Ages, but in modern times timorous attempts have been made to revive the apparently defunct system of generationism. Hermes, Klee, and Oischinger endeavoured to restore it at least to the rank of a probable opinion... Frohschammer remodelled the ancient theory by raising the act of parental generation to the dignity of a secondary creation... Rosmini held that the Creator transforms the sensitive soul, which the child receives by generation from his parents, into an intellective soul by permitting it to catch a glimpse of «the idea of being».... Generationism can no longer be upheld: its fate is sealed for good — (**Pohle-Preuss.** *op. cit.*, p. 171).

ma, non potest attingi per facultatem sensitivam, tum quia, etiamsi hæc manifestatio esset possibilis, minime per eam posset anima sensitiva in intellectivam converti; nam intuitionem entis, utpote quid accidentale, specifice mutare naturam animæ eamque evehere ad ordinem intellectivum intrinsece repugnat. Nec proinde potest intuitio eam specifice ab anima belluina distinguere.[1]

390. *Dices:* Omnes admittunt hominem generari: *atqui* homo constat anima et corpore; *ergo* anima generatur.

Resp. Omnes pariter admittunt hominem mori, non ideo tamen admittunt animam mori. Sicut actiones et passiones, ita etiam appellationes sunt suppositi, et proinde haud improprie «generari» et «mori» de homine prædicantur, licet anima nec generetur nec moriatur. Et quidem, ideo homo, et non solum corpus, generari dicitur, quia naturalis terminus generationis est unio animæ cum corpore germinali, qua unione compositum formaliter constituitur. Quum itaque generatio sit causa dispositiva hujus unionis, compositum constans anima et corpore, non solum ipsa anima vel corpus, proprie generatur.

ART. II.

DE CREATIANISMO.

391. Animam rationalem a Deo per creationem produci nullo negotio eruitur ex modo dictis in *art.* præcedenti, et directe demonstrari potest ex animæ spiritualitate. Omnis enim substantia aut producitur ab alia substantia per mutationem substantialem, aut producitur ex nihilo per creationem. *Atqui* anima rationalis, utpote immaterialis, nequit produci *(a)* ex substantia materiali, quum hæc, ne virtualiter quidem, contineat immaterialitatem; *(b)* nec ex substantia spirituali, quum talis substantia divisionem et mutationem substantialem non admittat. Restat igitur, ut anima rationalis fiat per creationem; creatio autem est Dei propria.[2] His admissis, quæritur quo tempore anima creetur et infundatur.

[1] If the sensitive soul in man becomes intellective through the apparition of the idea of being, what reason is there for not supposing the same of dogs and cats? — (**Liberatore**, *On. Univ.*, p. 181).

[2] «Quamvis nulla proprie de hac re adsit definitio Ecclesiæ te-

§ 1. De Tempore, quo Anima Creatur.

392. THESIS XLI.—Animæ rationales non prius creantur, quam. decursu temporis, suis corporibus infunduntur.

Stat. Quæst.— Plato, Philo, Origenes, Manichæi, Scotus Eriugena docuerunt animas jam multo ante creatas esse quam corporibus uniantur. Leibnitz censuit omnes animas simul creatas fuisse sexto die genesiaco et corpusculis organicis inclusas; has animas primo esse sensitivas tantum, sed evadere intellectivas, quando corporibus humanis uniantur. Sententia in thesi enuntiata est philosophice certa, nec de ea potest quisquam tute dubitare.[1]

393. Prob. Thesis. Arg. I. —Anima est substantia incompleta, ad unionem cum corpore naturaliter ordinata; *atqui* omnis sententia, quæ docet animas ante unionem cum corporibus extitisse, supponit animas esse substantias completas et corporibus accidentaliter conjunctas; *ergo*.

II.—Non congruit divinæ sapientiæ, ut prius tempore producatur forma substantialis, quam fiat compositum, cujus est pars essentialis et determinativa; Deus enim, utpote omnipotens et infinite sapiens, quamlibet rem condit perfectam juxta ordinem naturæ.[2] *Atqui* anima rationalis, quum sit pars essentialiter ordinata ad substantiam completam constituendam, incongruenter et absque ra-

merarias satis foret qui de hoc doctrinæ capite dubitaret » — (Palmieri, *De Deo Creante*, p. 261).

[1] « . . . Ultimo sententiam recenseamus, quæ universim apud Orientales obtinebat, necnon inter Occidentales Hilarium, Ambrosium, Leonem Pont., aliosque patronos habuit, nempe: animas hominum, priusquam suis inspirarentur corporibus, non fuisse, nec ab ullo incorporari nisi ab opifice Deo, qui ipsarum est creator, 'Hanc doctrinam,' juxta S. Leonem, 'prædicat catholica fides.' Unde, Conc. Later. V. statuit quod anima pro corporum quibus infunditur multitudine, singulariter multiplicabilis, et multiplicata, et *multiplicanda sit*» — (Eschbach, *Disp. Physiologico-Theologicæ*, ed. 2, p. 212).

[2] « Non fuit conveniens, ut Deus ab imperfectis suum opus inchoaret. . . non enim fecit hominem sine manu, aut sine pede, quæ sunt partes naturales hominis; multo igitur minus fecit animam sine corpore » — (S. Th., 1, q. 118, a. 3).

tione sufficienti ante ejus unionem cum corpore crearetur. « Anima, quum sit pars humanæ naturæ non habet naturalem perfectionem, nisi secundum quod est corpori unita. Unde, non fuisset conveniens animam sine corpore creari » (**S. Th.**, 1, q. 90, a. 4).

III.—Animæ, ante unionem existentes, aut operationes vitales exercebant aut non ; *si alterum,* frustra ante unionem fuit earum creatio ; *si primum,* debent harum operationum aliquam retinere memoriam. Nec valet dicere cum Platone *addiscere est reminisci. Nam* reminiscentia importat aliquam imperfectam rei memoriam (n. 246) ; nemo autem, quando res addiscit, deprehendit se olim ante hanc vitam illas scivisse ; gratis igitur asseritur præexistentia animarum, de qua nemo vestigium in memoria retinet. *Ergo* anima non prius creatur, quam corpori unitur.

394. *Dices :* Anima manet post ejus a corpore separationem, *ergo* a pari existebat ante unionem cum corpore.

Resp. Neganda est paritas; anima namque jam existens naturaliter postulat corporis esse superstes, sed nulla est ratio, cur ante ejus unionem cum corpore existat. Præterea, post mortem anima est in termino, ante unionem neque in termino neque in via existit.

Cor. — Ergo « anima rationalis creando immittitur, immittendo creatur » (**S. Bernard.**, *In Nat. Dom.,* sermo 2), seu, eodem momento immittitur et creatur. Attamen « creatio et infusio animæ, licet simul sint, respectu animæ tamen differunt ; quia creatio dicitur secundum respectum ad principium, a quo est anima tantum ; infusio vero dicitur secundum respectum ad duo, scilicet, ad principium, a quo procedit, et ad materiam, quam perficit » (**S. Th.**, 2 *sent., dist.* 32, q. 2).

§ 2. De Tempore, quo Anima Infunditur.

395. De momento, in quo anima uniatur cum corpore, duæ sunt sententiæ libere agitatæ inter scholasticos. Prima est *S. Thomæ* et veterum communiter, juxta quos in hominis generatione tres animæ successive producuntur (n. 191). Nimirum, primo fetus informatur anima ve-

getativa; nondum enim est capax vitæ vegetativa altioris Deinde, ex materia vi hujus animæ melius disposita, educitur anima sensitiva, desinente anima vegetativa. Anima sensitiva ulterius perficit corpus ad suscipiendam animam rationalem. Quando dispositio requisita attingitur, desinente anima sensitiva, creatur et infunditur anima rationalis, quæ est virtualiter sensitiva et vegetativa (cf. *S. Th.*, 1, q. 118, a. 2, ad 2).

Perperam quis diceret fetum humanum in hac sententia censendum esse ante animæ rationalis adventum plantam, et brutum animal; nam, ut notat S. Doctor *(C. Gent.*, lib. 2, c. 89), hæ animæ non sunt permanentes, sed transeuntes et quasi viales ad terminum. Res autem non a via sed a termino specificantur.

396. Hæc sententia perpaucos nunc habet defensores; ex his digni notatu sunt *Harper, Liberatore, De Maria,* et *Mercier*.[1] Præcipuæ pro ea rationes sunt hæ: 1°. « Natura in suis operibus moliendis non operatur per saltum, sed omnia efficit gradatim; *atqui* inter naturæ opera principatum sibi vindicat homo; *ergo* oportet, ut corpus per formas intermedias perficiatur ad suscipiendam animam rationalem » (**Liberatore**). *Alii respondent:* ad gradatam productionem viventis non requiritur successio formarum, sed evolutio embryonis e statu imperfecto ad statum perfectum; nemo admittit successionem formarum in planta, tamen hæc gradatim efficitur. Quod attinet ad « saltum naturæ », saltus aliquis revera daretur, si esset successio animarum in eodem corpore; revera excluditur, hac successione negata.

2°. « Anima rationalis non potest conjungi cuivis corpori, sed tantum corpori ad congruum humani corporis organismum perducto; sicut a pari non potest manere in corpore, quando hoc ad vitæ functiones homini consentaneas ineptum redditur » *(Idem). Alii respondent:* Prima pars hujus argumenti involvit petitionem principii; id enim præcise quæritur, an possit anima infundi

[1] Cujus argumenta « non sunt nisi suasiva » — (**Janssens**, *op. cit.*, p. 649).

corpori imperfecte efformato. Jamvero, nec a priori nec a posteriori potest ullo modo probari corpus embryonale ineptum esse ad animam rationalem recipiendam, et ad cooperandum ad operationes vegetativas (et deinde sensitivas) animæ rationalis. Immo, sola anima rationalis videtur apta ad præparandum corpus sibi consentaneum; nam ipsa sola in se colligit omnes virtutes inferiores easque ordinat ad vitam intellectivam. Præterea, argumentum nimis probat; sequeretur enim animam rationalem non informare corpus infantis recenter nati, quum in tali corpore multa adhuc desideretur organisatio et perfectio, ut infans vitam intellectualem exercere possit.[1]

Juxta physiologos anima non prius decedit a corpore, quam hoc evadit ineptum ad operationes *vegetativas,* quamvis longe ante cessaverit intellectio, vel etiam sensatio; *ergo* venit simul ac corpus ad operationes vegetativas fit aptum.

[1] The human organism in a viable child of seven months is far from completion, as the Thomists understand completion of an organ: it has only part of the brain, part of the entrails, the muscle-tissues of the legs are not differentiated, the special senses are not fit for any communication between the soul and the outer world, except so far as a crude sense of touch is concerned, and so on. The human organism is not literally complete, even as far as the vegetative and sensitive phases of life are concerned, until the end of the ninth month.

What obstetricians technically call «quickening» takes place between the eighteenth and twentieth weeks after conception. . . At that time the head constitutes about one-fourth of the fœtus, the spinal cord and the brain are only partly laid down, indicated: the incomplete intestine is within the abdomen, but the colon is not formed, the lungs have no air-vesicles; the special senses are merely indicated, and the placenta has been in operation only a few weeks. . . There must be some kind of organic body present for the soul to inform, vitalize, but what is meant by organic body? If you mean a body with all the organs complete, then the soul cannot be put into the body until the end of the ninth month of gestation, at the earliest. If you go back to the time of quickening, between the eighteenth and twentieth weeks, the only organ of the body, as organs are known by the Thomists, ready for use is the blood, and at the fortieth day, when the male fœtus is animated according to St. Thomas, there is less of these organs, as the Thomists recognized organs, than at the time of quickening — (**O'Malley**, *Eccles. Review,* Feb., 1914, pp. 184-8).

3°. « Sicut omnis explicatio, quæ subsequitur formationem organismi humani, habet rationem augmenti; sic omnis evolutio, quæ formationem illam antecedit, habet rationem generationis. *Atqui* forma non est principium, sed terminus generationis; *ergo* anima, antequam organismus efformetur, non infunditur » *(Id.)*. *Alii respondent:* Certum est unionem animæ et corporis esse terminum generationis, tunc enim habetur res generata, *scil.*, homo. At quæstio agitata est: quando fit hæc unio; quæ quidem est solvenda, non petenda. Revera, prædicta unio seu generatio fieri potest in primo stadio existentiæ embryonis, ita ut formatio organismi non sit identica cum generatione, sed sit ejus effectus.

397. Unde, juxta alios, anima rationalis corpori infunditur in primo instanti conceptionis, licet varias suas potentias successive tantum, prout corpus magis magisque evolvitur, exerceat.[1] Rationes pro hac sententia, præter illas jam datas contra primam sententiam, sunt hæ: 1°.

[1] Hanc sententiam philosophorum approbant, vel certe practice omnino sequendam docent « Theologi, ubi de subjecto baptismi quæstio incidit. 'Quamvis,' ait *Roncaglia* (1736), 'diu viguerit aristotelica opinio masculos non animari anima rationali nisi post quadraginta dies a conceptione, et femella post octoginta, jam ab aliquo tempore *non sine plausu* recepta est opinio: ab initio conceptionis fetum anima rationali animari.' Doctrinam eamdem tamquam sua ætate communiter vigentem ipse *S. Alph. de Liguori* exhibet atque approbat *(Theol. mor.*, l. 6, n. 107). Unde *Card. Gousset*, scripsit quod 'secundum opinionem probabiliorem et magis receptam apud hodiernos auctores, fetus dicendus est animari in primo conceptionis instanti.' Hoc hodiernus Gurianæ theologiæ moralis cl. annotator *(Ballerini)* tot putabat convincentibus argumentis suffultum, ut vix dubium aliquod hac de re adhuc moveri posse declararet. 'Quæ quidem sententia,' sic ille, 'quatenus nullum fetum inanimatum admittit, cum communius modo, præsertim post accuratiores a physiologis institutas observationes, recepta sit, ac defendatur uti magis consentanea non solum philosophicis, sed etiam theologicis principiis, consequitur vix causam subesse, cur de hypothesi fetus inanimati nunc quæstio specialis fiat' *Comp. theol. mor.*, v. ii., n. 402 » — (**Eschbach**, *op. cit.*, p. 239).

Secundum præsentem Ecclesiæ disciplinam « curandum est, 'ut omnes fetus abortivi, quovis tempore editi, si certo vivant, baptizentur absolute: si dubie, sub conditione' (Can. 747). Si ergo omnes fetus, modo certo *vivant*, absolute baptizandi sunt, ut indubitatum præsupponitur animam rationalem esse unicum fontem vitæ in

Juxta inconcussum philosophiæ principium, entia non sunt multiplicanda absque necessitate, seu, fieri non debet per plura, quod potest fieri per unum; *atqui* nulla est necessitas pro serie animarum in hominis generatione, quum anima rationalis possit efficere in fetu (et, omnibus latentibus, revera efficit in corpore per totam hominis vitam) quidquid efficerent animæ inferiores. Et proinde simul atque embryo habet talem rudem organisationem, quæ sufficiat ad exercitium vitæ vegetativæ, jam adest ratio sufficiens, cur anima rationalis creetur et infundatur.[1]

2°. Juxta physiologos jam ab ejus initio fetus humanus nutritur alimentis organicis ad modum hominis vel animalis, non vero alimentis anorganicis, instar vegetalium.

3°. Nulla apparet ratio, cur anima pure vegetativa, ex qua, in prima sententia, tota activitas primitiva procederet, disponeret corpus embryonale ad eductionem animæ sensitivæ; et similiter, cur anima sensitiva illud perficeret in ordine ad animæ rationalis susceptionem; potius censendum esset embryonem per has perfectum iri in specie plantæ vel bruti. Gradata autem perfectio organismi optime explicatur, si tota formatio tribuatur animæ rationali, quæ in hac formatione primo exercet suas facultates vegetativas, et postea vegetativas et sensitivas exercet. (cf. *Eschbach,* loc. cit., *Urráburu,* Psych., v. i., p. 683, et v. iii. p. 730)[2]

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quovis humano fetu: ut enim baptismus *absolute* conferatur, postulatur fetus *certo* informatus anima rationali» — (**Huarte**, *op. cit.*, p. 208).

[1] The soul must have disposed matter, but it does not need a human organism complete in all its parts. . . There is organized matter enough, and to spare, in the first cell that comes into existence after the fusion of the germ-nuclei to hold the intellectual form as perfectly as it needs to be held in the first stage of human life. — (**O'Malley**, *loc. cit.*, p. 189).

[2] Cette opinion *(de successione animarum)* paraît aujourd'hui complètement délaissée, et il n'y a pas à la regretter. Nous croyons que l'on doit absolument admettre que l'âme raisonnable, celle qui est la *forme* unique de l'être humain, existe dans l'organisme dès la fusion des deux cellules primordiales qui constituent la cellule-œuf, d'où dérivera l'individu tout entier. La différenciation des élé-

Obs. Quibusdam (v. g., *Farges* et *Hugon)* placet opinio inter recensitas sententias media, quæ initio animam sensitivam inducit, cui postea succedit anima rationalis; et nonnisi sic modificatam admittunt primam sententiam. Atvero inexplicatum relinquunt, quomodo corpusculum germinale, quod supponunt incapax recipiendi animam rationalem, sit capax recipiendi animam sensitivam. Revera, tale corpusculum aut potest informari anima rationali aut non potest informari anima sensitiva.

ments cytologiques provenant de cette cellule initiale doit, en effet, se faire dans le sens humain : il faut donc qu'elle soit sous la dépendance, non pas d'un principe exclusivement nutritif, ni d'un principe exclusivement sensitif, mais d'un principe capable à la fois et de régler la nutrition, et de présider au développement des facultés de sensorialité, et de diriger l'évolution de l'organisme vers la réalisation du type supérieur qu'est l'être raisonnable: ce principe doit donc être dès le début, la même âme que celle dont l'action gouvernera, chez l'adulte, toutes les manifestations, même purement végétatives, de la vitalité humaine. . . En d'autres termes, nous pourrions dire : toute différenciation, parce qu'elle est spécifique, doit être assurée par l'action intrinsèque d'un principe spécifique ; or, chez l'homme, les différenciations embryogéniques tendent à réaliser, pour la part qui revient au constituant anatomique, un être spécifiquement raisonnable : c'est donc l'âme raisonnable qui doit, de la constitution de la cellule initiale, informer cette cellule et orienter son évolution — (**Boule**, « *Etudes,* » Juillet 5, 1914, p. 41).

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108	2	metaphisical	metaphysical
139	15	placed side, by	placed side by side,
153	14	some	same
155	6	chorine	chlorine
161	3	now	new
173	21	negarive	negative
183	6	ant	and
»	9	ordely	orderly
188	5	humain	human
192	9	strenously	strenuously
213	2	wither	whither
216	20	retrained	retained
227	10	remembet	remember
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231	8	Anatomism	Anatomist
244	2	physiologist	physiologists
252	20	concourse atoms	concourse of atoms
263	10	mineteenth	nineteenth
282	11	plain	pain
286	12	ut	us
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290	8	If	It
292	3	or	of
301	30	so	to
330	1	in capacitation	incapacitation
395	9	wich	which

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18576
HICKEY, J.S., O.CIST.,
AUTHOR
Summula Phil. Scholasticae
TITLE
Vol. II, Cosmologia & Psychologia

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